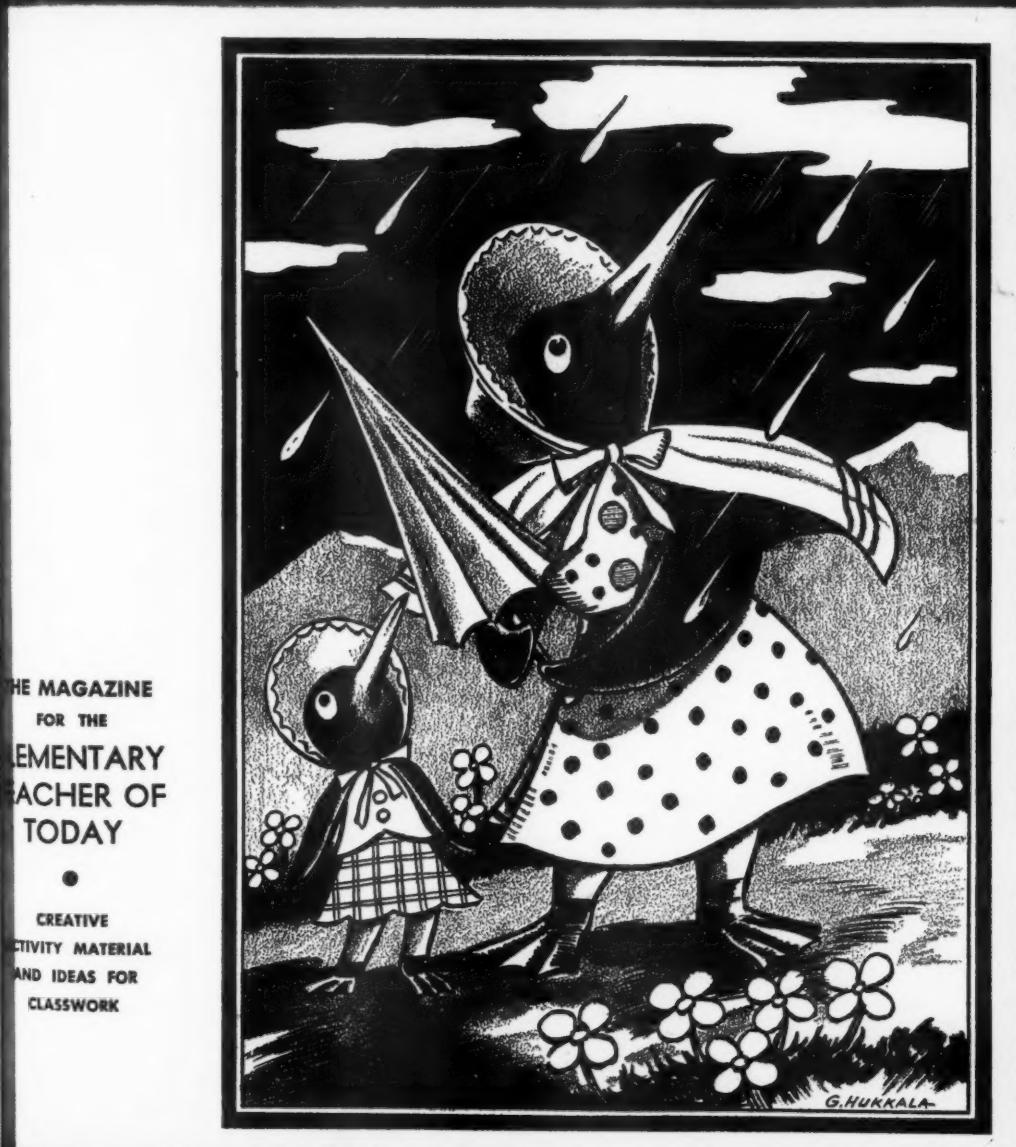


JUNIOR ARTS AND ACTIVITIES



THE MAGAZINE
FOR THE
ELEMENTARY
TEACHER OF
TODAY

•
CREATIVE
ACTIVITY MATERIAL
AND IDEAS FOR
CLASSWORK

VOLUME 7 — NUMBER 3
APRIL 1940

STARTING AND MAINTAINING A COMMUNITY ORCHESTRA

by
AUGUSTUS D. ZANZIG

In his foreword to "Starting and Maintaining a Community Orchestra," Ernest La Prade, Director of Music Research of the National Broadcasting Company, calls attention to the tremendous increase in interest in amateur music as shown in the extraordinary orchestral and choral work of the schools and in the multitude of non-professional orchestras which have sprung up.

"These orchestras," says Mr. La Prade, "already numbering hundreds, would doubtless multiply even more rapidly if more of their would-be promoters knew how to go about launching them. To all who seek such knowledge this booklet will prove invaluable. Mr. Zanzig has collated the experience of scores of groups and analyzed their problems in the light of his own unique experience in the field of recreation. The result is a practical and authoritative manual for the guidance of those who would help music to regain its amateur standing."

The booklet discusses such practical matters as How to Start; Securing a Leader; Securing Players; Costs and How to Meet Them; and Organization.

PRICE \$35

NATIONAL RECREATION ASSOCIATION

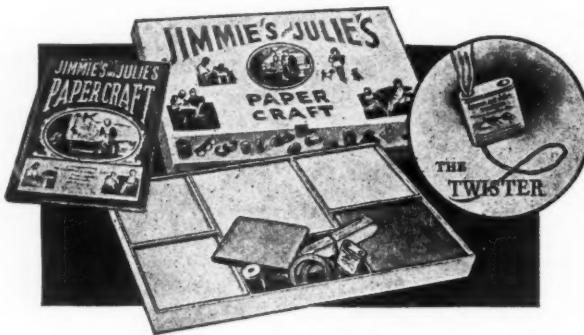
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"A Golden Apple his only sign,
That hung from a long branch,
ripe and fine." Westwood.

"And shake the old tree
as we swing — we swing."

Howitt.

"The black wasp's cunning way, —
Mason of his walls of clay."

Whittier.

"Where the squirrels hid
their acorns."

Longfellow.

"Blue-black beetles transact
business,
And gnats fly in a host."

Rossetti.

"A nest of robins in her hair."

"Who intimately lives with rain."

".... I shall never see
A poem lovely as a tree."

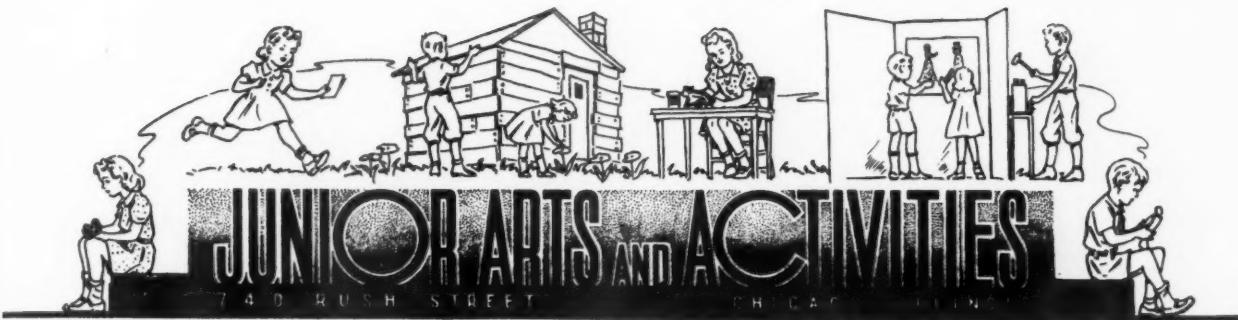
Joyce Kilmer.

In how many ways can an apple tree be of use? Some are shown in the picture, but there are other ways. Here is an inn for many transients and a home for the birds. The wasp, also, hangs his home here, and the squirrel hides among the leaves and scolds unwelcome visitors. Boys like to climb a tree and girls like to swing. A tree branch is just the place for a swing! A blossoming apple tree is Spring's gift of beauty to the world!

"Who sit in the warm shade and feel right well
How the sap creeps up and the blossoms swell."

Lowell.

G. HUMKALA



THE MAGAZINE FOR THE ELEMENTARY TEACHER OF TODAY

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JUNIOR ARTS AND ACTIVITIES

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What are the paths taken by our migratory birds? What are the chief problems involved in the construction of a large dam? Your pupils would like to know, too, and you'll find the answers in this issue.

MERGER

Can boys and girls thrive on book-learning alone?

Pause for a few moments. Study your group of boys and girls. Analyze them—not as a group, but as individuals:

Here are Jane and Ethel and Henry—three bright pupils who study their books and always know their lessons. There are Ted and Mary who study very hard but never seem to absorb enough to get satisfactory grades. Then there is Ralph, who may be termed dull; he just can't grasp things and refuses to try. Joe never knows his lessons, either, but he's different from Ralph: Joe is very alert and is always ready to cooperate when there are things to do or things to make, although he can't be interested in books.

You have Janes and Teds and Ralphs and Joes in your classroom. Those who are poor pupils, as far as book-learning is concerned, are missing much. And, in missing much, they are making your job harder, less interesting, and less effective. What do you do about the "poor" pupils?

Now we fully appreciate the load each teacher has to carry. How is the busy classroom teacher going to see that each child develops and learns along with the rest of the class? How is she going to be sure that not a single child is "wasted"?

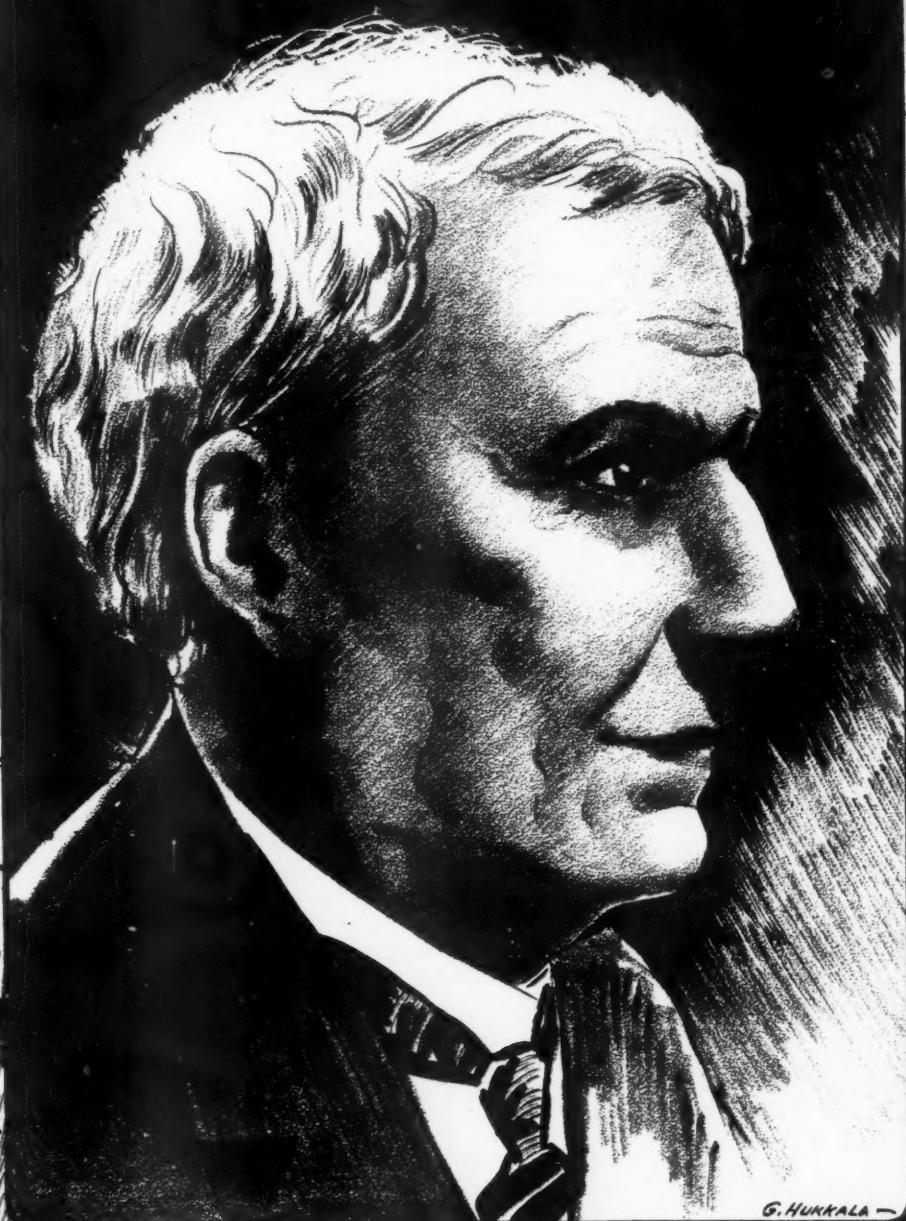
The answer is: By merging book-learning with activities that will give every child a chance to participate. For book-learning is definitely not enough. Even the very bright pupils who learn easily from books are missing much unless they are given a chance to use the knowledge they are acquiring, a chance to make it a part of their experience, to be remembered always.

Children who have difficulty learning from books need activities most of all. In the case of these children, activities arouse and hold their interest, give meaning to lessons, and raise questions that cause them to turn to textbooks for the answers.

Every child in your class loves adventure. Merge activities with book-learning and you create adventure in school work. Your community, your neighborhood, the school yard itself holds plenty of adventure if you will show your pupils how to find it. Take, for example, the natural resources of your community and the many activities they suggest. Here is something your pupils can see and understand—the soil, the climate, the trees, the water, the vegetation, the minerals, the animal life. This issue of JUNIOR ARTS AND ACTIVITIES will help you to present these resources in a way that will mean adventure for your pupils. The adventure will create interest, understanding, and a desire to know more, and each child will have a more equal chance for a life of usefulness.

—Editor

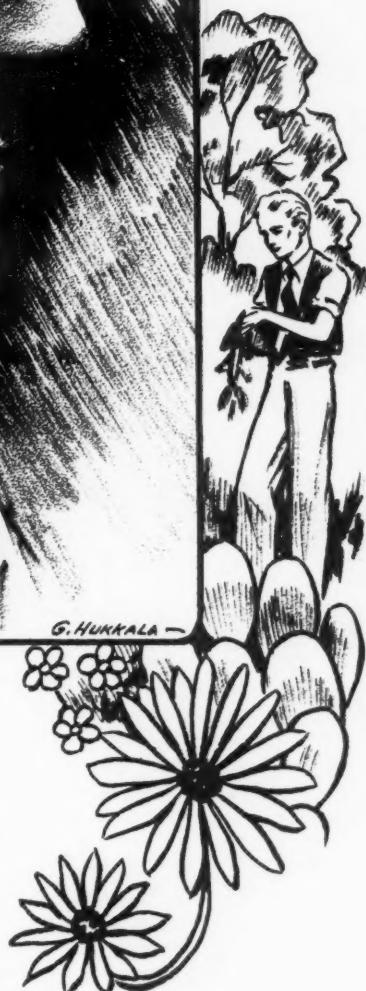
LUTHER BURBANK



G. HUKKALA -

LUTHER BURBANK
1849-1926

Flowers, fruits, grains, grasses, vegetables, and even trees of the orchard and forest were given a new usefulness through his experiments. This meant years of patient and often discouraging work. His new improved forms of plant life have added to the wealth of nations and enriched the food of mankind. His flowers make the world more beautiful. His whole life was devoted to learning how Nature does things and he found much hitherto invisible to others. The road over which the great naturalist traveled between his farm in Sebastopol, California, and his Santa Rosa home and gardens where he did his work and won world fame, is to be known as "Luther Burbank Highway."



"THE GATHERING OF THE WATERS"

When we see large masses of white clouds, sailing across a blue sky, on a sunny day, we seldom stop to think of rain. If, however, the clouds encounter a stratum of cold air, down comes the rain.

When in the night we wake
and hear the rain
Which on the white bloom of
the orchard falls,
And on the young, green wheat-
blades . . .
Then fancy pictures what the day
will see—
The ducklings paddling in the
puddled lane,
Sheep grazing slowly up the
emerald slope,
Clear bird-notes ringing, and
the droning bee
Among the lilac's bloom.

R. B. Wilson

Water means life to all things; continued drought means death to plants and animals, and even to man. In past ages, death lurked in dirty water holes, and plagues wiped out entire villages; but now, cities, which get their water supply from turbid streams, have purification plants safeguarding the health of men.

Rain comes from the clouds, so the first story to be studied is the one about the sun shining on water and changing it to vapor. The vapor rises and changes into clouds; then the clouds cool and change to rain. When the rain falls to the earth, the water seeks the rivers, lakes, and sea. The difference in the effects of the sun's energy in the latitudes and altitudes of the world, the rotation and revolution of the earth, and the great wind currents cause irregular atmospheric disturbances and a varying rainfall from year to year.

It is a fascinating topic, the tracing of a raindrop's journey. But it must be remembered that its itinerary depends upon the place in which the raindrop reaches the earth, and the time of its arrival. If it happens to fall on a very hot pavement or the shining surface of a lake, it may be drawn right back into the air by evaporation. But if it lands with many others on a hillside, it will flow down to join streams of water which will eventually reach the sea. If there is vegetation, the thirsty roots of plants may drink it up, although by transpiration, it finally es-

capes as vapor through the spores of the leaves. It may, however, sink down into the earth to reach an underground spring.

Gravity, which pulled the raindrop from the clouds, pulls it still deeper into the ground. If it escapes the rootlets and has free passage through the particles of soil, it meets other drops, and the pressure of the group urges it on with a certain "head." One hundred feet of "head" means the pressure of water one hundred feet below the surface, minus that which might be used up in overcoming friction. How far the raindrop will go depends upon the holes in the soil. Water can percolate through sandy soil readily, but if it strikes a rock it must grope about for a crack through which to escape. This struggle along twisting paths is called friction.

Finally, the holes in the soil are filled to overflowing, for the water from previous rains may have been accumulating for years, even centuries. This accumulated water is called the ground-water, and its top level, the water-table. The ground-water constantly seeks lower levels but is often held back by impervious rock. If this layer of rock is drilled, the water comes up and becomes a "driven" well. Old fashioned wells were made by digging into the ground until water was reached. It was walled in with stones and brought to the surface by a bucket. Then, with pumps, came deeper wells. When digging a well, if a crack or open space in the rock or clay is struck, where water has been imprisoned, it gushes forth and continues flowing. It is called an artesian well. The imprisoned water may reach the surface in a spring, by forcing itself through a faulty portion in the impervious layer. There are some springs that come out of the ground because the soft soil cannot hold any more water.

An underground flow lying open at the upper end to collect water, and then running under the rock which prevents it from either evaporating or escaping, supplies most of man's need for water. The slope from the Rocky Mountains to the Mississippi River is one of the largest underflow areas in the world. The raindrops have fallen far to the west and pushed their way to the southeast under the great plains, only to be drawn up by thousands of wells.

Along the coast, from New York to Florida, is another supply area. After supplying New York and many other large cities, the underground water passes out into the ocean through caverns in the rocks off the coast of Florida; the fresh water bubbles up to the surface in springs many miles out in the salty sea.

Many cities depend upon nearby rivers and lakes for their water supply. Water is now collected in reservoirs, some high up in the hills so the water will be clear and cold. This is an ancient practice, for India, Egypt, and Arabia had dams in the rivers to impound the water. Alexandria had cisterns to catch the flood waters of the Nile, and the Romans built aqueducts to supply water in every country they ruled. The Incas of Peru, in the New World, carried water long distances in stone channels.

Modern engineering has improved ancient methods. In building an aqueduct today, some of the requirements to be considered are, how to pump against the gravity flow, and how to place the pipes in the earth to take advantage of natural features. When the almost human cranes have put the lengths of pipe in place, when gates have regulated the flow, and when such things as valves for the escape of air, the manholes, the meters, and the regulation of pressure are finally adjusted, the water sweeps into the city mains.

The water in the reservoir does not come to the city dweller just as it fell from the sky or surged up from the ground. Mud, color, taste coming from minerals dissolved, and a disagreeable odor coming from decaying vegetable or animal matter must all be removed if the water is to be pleasant to use.

Water, as it moves on to a lower level, gathers a great deal of energy, due to

its weight and motion. Man has learned to use this energy of the water to help him to do his work.

The Chinese, Egyptians, Norsemen, and Romans had a wheel with an endless rope and buckets dipping down into the water; an animal turned the wheel and lifted the water. Windmills in Holland pumped the water by means of power from the wind. When London became overcrowded and there was a need for more water, England sent to Holland for one of her engineers. Under the arches of London Bridge, this engineer built two paddle wheels which dipped down into the river. The running water in the river pushed the paddles and made the wheel turn, which pumped the water to the highest buildings in London. The water, however, was not pure, and plagues and fever swept the city.

As soon as it was learned that energy produced by wheels depended upon the head of the water, hydraulic engineering was born. Men had always known that steam formed when water was boiled; they did not know that steam, by producing a vacuum, could create power. Late in the seventeenth century, James Watt, by perfecting the experiments of others, found steam could be made to lighten work. He said to his assistant: "It is a great thing to find out what will not do; it leads to finding out what will do."

Almost everything we use today depends upon mechanical power, made available through recent inventions of steam, gas, and electric engines. Mechanical power drives machinery, propels vehicles both on land and sea, and makes the Father of Waters, the Mississippi, give up vast amounts of horsepower, while a power house transmits electricity over a radius of three hundred miles. The modern generator which produces energy is driven by falling water, oil, or coal. The sun, of course, is the great source of all power, but water helps to carry on its work, being in part responsible for both oil and coal.

Eleven million, seven hundred thousand horsepower is developed in the United States alone, but four times this amount of water energy goes back to the sea unused. Less than one-fifth of the electrical power is generated from falling waters in the United States, and if all were used, the saving in coal and oil would be immense. Even if all the water power of the country were developed it would not meet the energy needed in man's work. With increasing demands upon our natural resources, such as coal, oil, and gas, engineers have organized and directed their activi-

ties toward curbing the waters. This will provide more fertile lands and lower priced power.

Primary Activities:

In primary grades, only simple aspects of the geography of the local community, as it has been changed by rain, should be touched upon. Natural features are found in miniature in any locality where bare earth is exposed to the action of the sun, wind, frost, rain, and running water. Do not introduce abstract ideas, but emphasize certain elements of the child's environment. On such a limited area as the school playground, miniature illustrations may be observed, such as streams, tributaries, a lake after a heavy rain, tiny flood plains, divides, deltas, cliffs, islands, and shore lines. Stress the significance to mankind of such formations, which are to be visualized on a larger scale when the geography of the world is studied. Have them note that houses are built on ridges where drainage is good, and not in areas along streams where floods might occur. They should be shown that soil is finer near the surface where roots and earthworms permeate and pulverize, and that it grades downward to become solid rock.

To explain how rain is formed, boil some water and hold a cold plate above the steam. Bring a pitcher of ice water into a warm room and show why we have dew. To see how drops of water unite to exert pressure, either watch a stream or turn a hose on a sand pile in the school yard to see how water eats away the sides of the banks. See how the stream carries sand, sticks, and pebbles as it travels. Note where they come to rest.

Take a mixture of sand, clay and muck and fill a fruit jar half full. Add water to fill the jar two-thirds full. Shake well and allow the soil to settle. Which layer of the strata has the finest particles? Tie a cloth over the mouths of three lamp chimneys and turn them upside down over a bowl of water; hang each chimney by a string so they will not rest upon the bowl. Dry and pulverize equal amounts of the sand, clay and muck and fill chimneys two-thirds full of each type of soil. Pour a cup of water in each and watch how long it takes for the water to drain through. Which soil drains the fastest? Which soil left the cleanest water in the bowl? Reverse this experiment by allowing the chimneys to project slightly into the water in the bowls. Which soil absorbs the water the fastest?

Place a few seeds in three fruit jars, an equal amount in each. Keep those in jar No. 1 barely moist; in jar No. 2

well watered; and jar No. 3 covered with water. Put a cover on the jars to prevent the escape of moisture. Which seeds grow best? This helps to explain why grain planted in the spring usually sprouts earlier than the grain planted in July, and what sometimes happens to seeds when there is too much rain in the spring. Could we live without rain? What causes the seeds to swell, the buds to bloom?

Make a booklet showing: It is a rainy day—we need umbrellas, rubbers, and raincoats on rainy days. Ducks, frogs, and flowers like rainy days. List the work of the rain: gives us water to drink—washes the earth—cools the air—softens the ground so flowers can grow—turns wheels. Mark the rainy days on the calendar of the month by drawing a tiny umbrella on the date of each rainy day. Art: To show that slanting lines give motion to a picture, draw a child walking in the rain, holding an umbrella against the wind.

Intermediate Grades:

Before taking up regional geography, the child should have a knowledge of local weather conditions, such as the amount of rainfall during the year.

Put some water in an uncovered glass and let it stand several days. Try to wash off the white ring that forms. Look in a teakettle for flat pieces of stony coating found after water has been boiled in it several times. Water can dissolve gases, liquids, and solids. There is a limit to the amount it can dissolve. Add salt slowly to a glass of water. What happens when more is added than the water can hold? Add more salt and heat the water. Watch what happens when the water is heated and then cooled. Mix starch with the water and stir well; let it stand. Does the water dissolve the starch? Things that cannot be dissolved in water are called insoluble. List some soluble and insoluble substances.

Rain water is always soft because it has been in the air and has had no chance to dissolve the lime which hardens it. When in the ground, it has dissolved some of the lime found in soils and rock. Study limestone caves. List cloud formations from which rain comes and learn their weather meanings: *Cumulus*—light and fleecy—fair weather; heavy, with rounded tops and peaks—showers. *Cirrus*—light, feathery and very high—an approaching storm. Composed of ice particles. *Stratus*—low and dark colored—fog. *Nimbus*—dark gray and close to earth—rain. *Cirro-cumulus*—spotted, called a "mackerel" sky. *Cumulo-nimbus*—mountainous thunder clouds.





ALTO CUMULUS

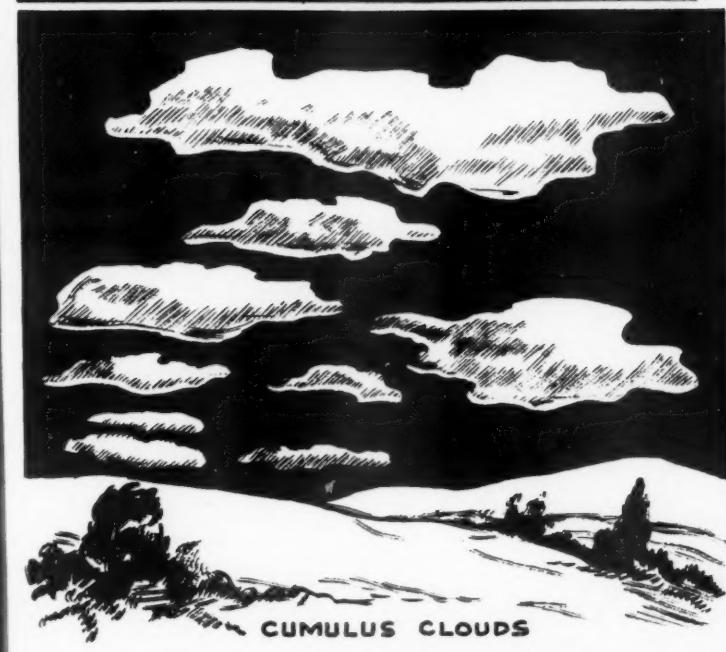


CUMULO - NIMBUS, THE THUNDER HEAD CLOUD

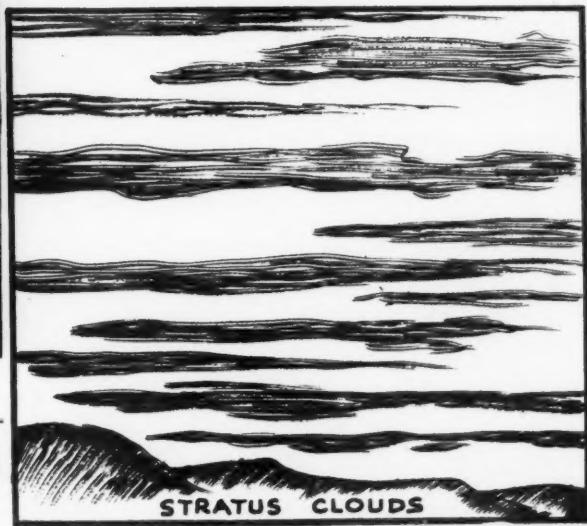
CIRRUS CLOUDS



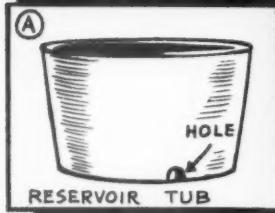
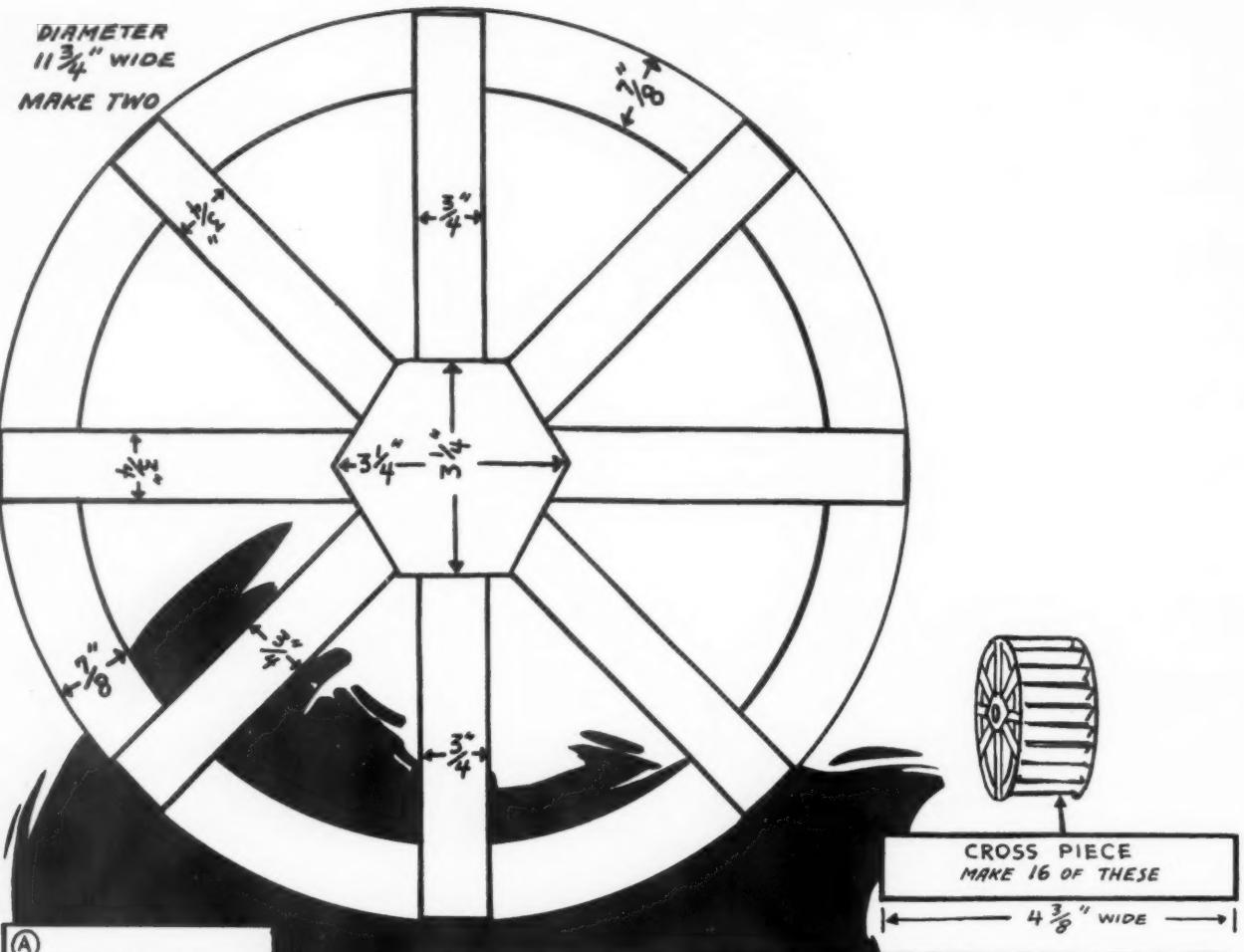
NIMBUS
OR RAIN CLOUD



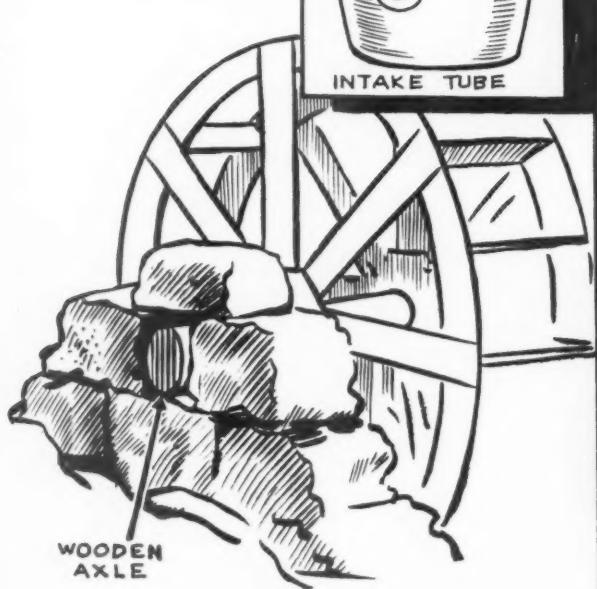
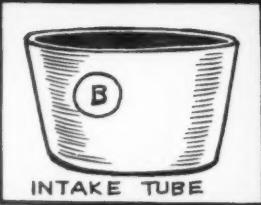
CUMULUS CLOUDS



STRATUS CLOUDS

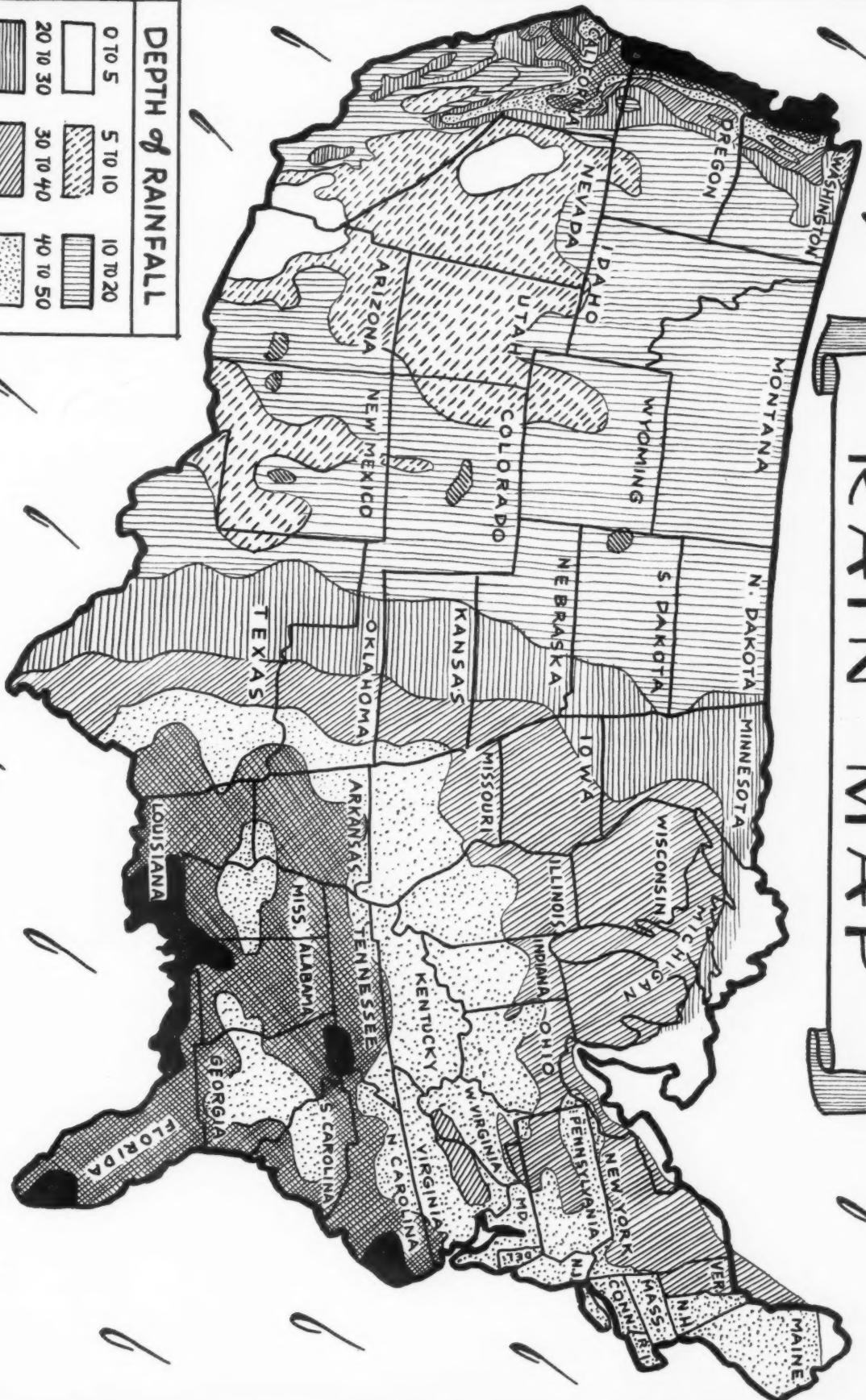
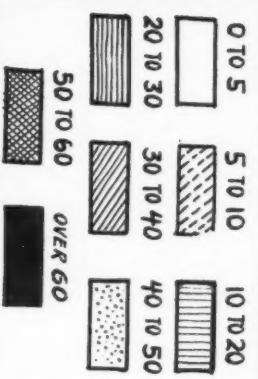


WOODEN AXEL FROM PLAY BROOM



RAIN MAP

DEPTH of RAINFALL



OUTWITTING NATURE

GRAND COULEE DAM

The Grand Coulee canyon, with its bottom 600 feet above the ordinary river level, is a wonderful example of the properties of water. Ancient man knew them only in part, but modern engineers have made use of knowledge to bring about the greatest feat ever undertaken. This dam is in a solid granite canyon where the Columbia River, the second largest river in the country, was once diverted from its source. In the days of glaciers, it was forced to cut a new channel while a glacier choked its course temporarily. As the glacier receded, the river returned to its normal channel. Now, engineers have followed the clue of Nature and propose to raise the water level of the river once more to this temporary course.

Parts of the state of Washington are dry and unproductive, though the Columbia River winds through this desert-like portion carrying a large volume of water gathered from melting snows. The river gave no drop of its precious treasure to water orchard or field. It thundered through bare lava rocks in a cavernous gorge until man's genius thought of using twelve powerful pumps regulated by electricity to lift the river into a huge lake, whose basin, the Grand Coulee, was made thousands of years ago. The river now has a dam, reaching two hundred feet down through mud, to granite, and reaching three hundred and fifty feet into the air. Thus, from the old course of the river, a vast reservoir was created, and the dry gorge with its walls twelve hundred feet high was converted into a dam which holds back the fury and volume of the river waters. There will be ten dams between Grand Coulee and the Pacific Ocean before the entire project is completed.

Bonneville Dam is located forty-two miles upstream from Portland, Oregon. It is just below the Cascades of the Columbia, in the gorge where the river has hewed its way through the Cascade Range as it seeks the sea. An inland waterway is now open to transport local

products to the Pacific from inland bodies of water, and raw materials from South America and the Far East can be brought in from the ocean. The highest lock in the world can lift an ocean vessel seventy feet over the dam. It is expected that this abundant transportation and the low-priced power will attract other electro-chemical and electro-metallurgical industries to the area.

The Columbia River is free from ice and silt and has small seasonal and annual variation. It has tremendous natural storage, and a drop, in its course through Washington, which carries sufficient water to cover an area the size of Texas to a depth of one foot. It is surrounded by forests and mineral deposits. It is noted for its salmon run. (Read *The Story of the Columbia River*, Crowell Publishing Co., Springfield, Ohio, 35c.) By holding back the water all the way to the Canadian boundary, a constant hoard of water will be maintained at the dam. The plan includes power and pumping plants and a distribution system consisting of canals and secondary pumping stations. These irrigation canals will carry water from the reservoir down into the West Columbia basin which is arid and waste. It will take water to the Imperial Valley, California, already famous for its irrigation system, and make even more acres produce.

The initial plans do not call for irrigation. However, it is hoped that eventually 1,200,000 acres will be irrigated by the Grand Coulee Dam, and make it possible for 40,000 farmers to produce grain, on farms ranging in size from ten to eighty acres. No lands are yet available for settlement under the project. The project is based on reports of Army and private engineers, stretching over many years. The tube of steel and concrete will hold a river of thirty-two million horsepower, and the entire Grand Coulee Dam will cost an estimated twenty-five million dollars, more than the cost of the Panama Canal. It is believed that the income, from industrial clients' purchasing power, will eventually cover this expense.

Fear that the Columbia River salmon run would be ruined has produced plans for artificial hatching below the dam.

There are a series of small pools with a regulated flow of water, arranged like steps. There are also locks like those for ships. The salmon swims into the lock, a gate closes, the water rises to the level of the river above the dam, a gate opens in front of him, and out he swims. In case he hesitates, a wooden platform rises automatically beneath him to push him out.

Grand Coulee Dam is three times as large as Boulder Dam in Boulder Canyon of the Colorado River. It will produce more hydro-electric power than all seven dams in the TVA. It is a greater undertaking than the building of the largest pyramids in Egypt, and the water area will be larger than the area of the Nile. Boulder Dam could be placed in one end of it, and an Egyptian pyramid in the other. At each tick of the clock it will raise five hundred tons of water three hundred and twelve feet. The bottom is smooth and cliffs rise on either side; these giant walls of the ditch do not rise abruptly from the river but slope gradually.

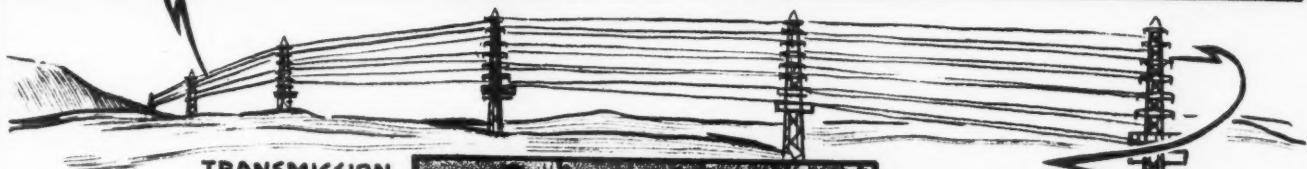
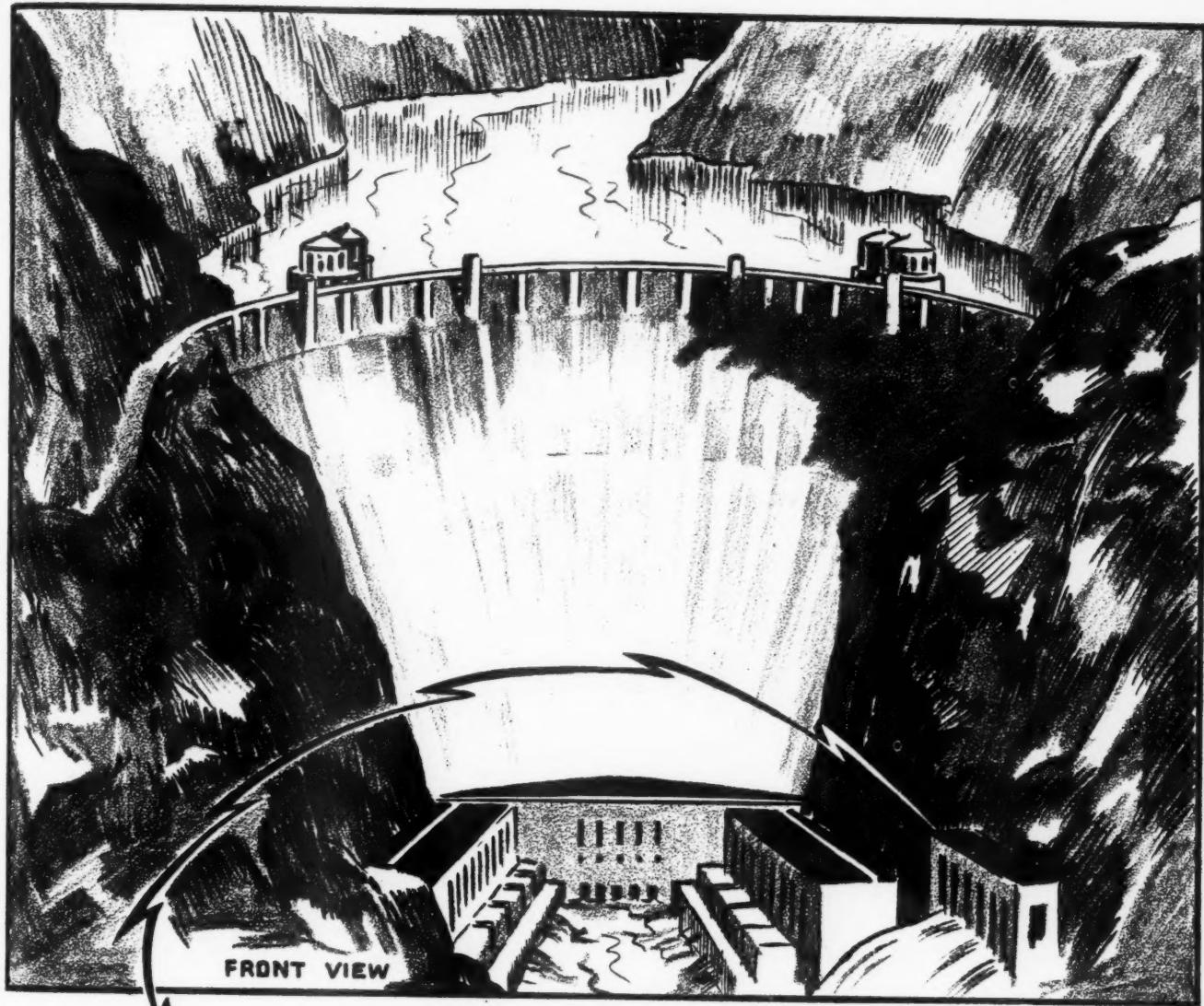
On these sloping sides are the buildings necessary for the carrying out of the enterprise, such as a school, dormitories, and headquarters of the engineers and employees. Across the river is Mason City, a town plotted by the three private contractors who won the bid to build the dam. It was too vast an undertaking for one contractor. The Government engineers act only in a supervisory capacity. After completion it will be operated by the Government. The buildings are all heated by electricity; this was an experiment to see how the power would pay. A special Government railroad is built from a spur of the Northern Pacific at Odair, Washington, and three bridges were built across the river to support the constantly moving gravel brought to mix cement.

As landslides delayed the work on Bonneville Dam, the clay was frozen by running six miles of pipe into it and pumping brine, cooled by refrigeration machines, into them. As canals did not keep water out of the excavation area, cellular coffer-dams of steel were built.

Activities:

Build a dam made from a box covered with cement. Place a power house at the foot of the dam and cover with a mixture of flour, salt, and water. Connect the two with a round stick, tipped with metal, which can be bent to resemble the elbow of the pipe. Construct mountains by stretching heavy paper over triangular frames made of laths. In a crevice of the mountains paint a blue stream covered with cellophane to look like water. Along the stream have tiny sticks painted silver for transmission towers. Put sand on the ground and mark off canals. Boxes, cut and stuccoed, make the houses on the sides of the gorge.

Make a study of the work of beavers, who also build dams. The Saskatchewan government has employed seventy-five beavers, placing them in streams where their dams will raise water levels and aid in fire prevention.



PAN AMERICAN DAY PROGRAM



by

ALICE THOMPSON

Pan American Day is observed on April 14, because on that date, in 1890, the first International Conference of American States, meeting in Washington, adopted a resolution that resulted in the creation of the Pan American Union. The day has been proclaimed in all of the twenty-one republics to give expression to friendly feeling and a better understanding among Americans. The schools in the United States are asked to learn something about their good neighbors to the South, to further their friendship. Here is a suggested program.

Try an international radio broadcast from the school. This will be imaginary, of course. Use toy chimes for time signals, and set up a small microphone. To make world events more understandable to the younger pupils, tie up the pseudo-broadcast with their own small world. Appoint one pupil for network announcer who gives the information that the broadcast is coming from Station WLM—World Literary Masterpieces. The local station announcer gives the name of the school and introduces the commentator who in this instance is the Old Woman Who Lived in a Shoe.

"Hello, boys and girls!
I'm the Old Woman who lived in a
shoe
Who had so many children I didn't
know what to do;
So out in the world I sent them to
roam,
Hoping they'd find for themselves
a far better home.
Are you there, Mexico?"

Mexico talking. I am one of The Mexican Twins. Lucy Fitch Perkins gave us a home. We want you to know we are very happy. We are neighbors to the south of the school which is hearing our broadcast and it is always sunny here, over the border. We like the hot, spicy food we get much better than the broth without any bread which the Old Woman in the Shoe gave us. We have such picturesque clothes—our blouses and aprons are embroidered, and our rebozos have bright colors.

This is the other twin talking. The boys enjoy the food and the happy-go-lucky life even better than the girls, for we can go barefooted, and have great sombreros to keep off the sun and rain. There are other story book children here, also. There is lovable little Rosita, from Russell's *Si, Si, Rosita*. The book is called that because Rosita's father usually says "Si, Si," whenever she asks anything of him. "Si" is the Mexican word for "Yes." We are very good friends, too, with Dodo, *The Little Mexican Donkey Boy*, given a home by Madeline Brandeis. We hope the children in your school will get to know them, too. Adios! "Once the dust of Mexico has settled on your heart, you have no rest in any other land," so we hope you come to visit us.

Hello, North America! We are *Peter and Nancy in South America*, brought here by Mildred H. Comfort. I am Peter. After leaving the Shoe we took a long trip, through the Panama Canal and visited Latin America, comprised of all the countries of America colonized by Latin European nations. Haiti was peopled by the French, Brazil by the Portuguese, and the eighteen other Republics by the Spanish. We found all the people warm hearted and kind and we are very happy to be a part of their home life and to be their friends.

I am Nancy. If you come to South America, I am sure you will find it an enchanting travel land. There are beautiful modern cities and tangled trackless jungles. You will especially enjoy the sight of primitive Indians, and ox-carts side by side with sleek motor cars. *Stories of South America*, by E. C. Brooks will tell you many things about this country, things about the geography and history not found in the children's books on South America. This is also true of *Stories of the Latin American States*, by Sanchez, which tells of Mexico, Central America, and the West Indies. But, here come two little Negro children of Haiti.

Hello, North America! We are *Popo and Fifina*, given a home by Arna Bon temps and Langston Hughes. I am Popo. Our father earns his living as a

fisherman now that we have moved from the farm to the village.

I am Fifina, and we want you to know we are very happy in our new home, though the things we do in our everyday life are very simple. Papa Jean catches many fish and we have lots of fruit to eat. We both help to earn a living, working in the banana plantation. The sun is so hot here, we need a lot of rest in the shade. Jamaica Johnny likes to "laze" in the sunshine, too. Here he is.

Hello, boys and girls! I was given my home by Elmer and B. H. Hader, and I'm sorry to say I didn't want to go to school. But I changed my mind, and I am really a good worker. The book tells you so. The people who gave me a home have also written all about a banana plantation in a book called *Green and Gold*.

Hello, boys and girls! We are two children who help our uncle on a farm in Honduras, Central America where bananas are grown and marketed. We were given a home by M. H. Lee who has told our story in *Children of Banana Land*. But I am sure you will want to hear from Martin who got lost. Here he is!

Hello, boys and girls! I loved wandering and for many days, as *Little Boy Lost*, I discovered the beauties of nature on the South American pampas, on the hills and in the forests, finally coming to the sea. I was found by W. H. Hudson who has written all about it in an exceptionally lovely story. It wasn't all fun, being lost.

Hello, boys and girls, north and south of the Rio Grande! I am the old woman who went up in a basket, ninety times as high as the moon. I promised to be with you by and by, when I'd swept the cobwebs right out of the sky. Well, they're gone, swept away, the misunderstandings and unfriendliness between neighbors. Now the sunshine of Good Will and Peace is no longer clouded. The children of today who learn about the children in other countries, whom they have never seen, will see to it that no more clouds of war or strife will darken the skies. I'll put my broom away now and turn the work over to you. Good Bye!

Note: The books listed are for grades 4 to 6. Higher grades planning a program may prefer to stress the romantic past of the Latin countries or the present day trade geography. South America runs South from tropic lands to the cold Antarctic waters at Cape Horn, so many possibilities of a deep and abiding interest in our southern neighbors can be promoted according to the taste of the school and the age of the pupils. Any program planned should strengthen the bonds between the Americas.



ALL ON A RAINY DAY

Three little frogs in a race did hop;
They jumped and jumped and went kerflop.

When it rained they saw an umbrella tall.

It wasn't at all, but they were quite small.

To them the umbrella seemed as big as a tree.

But it was only a mushroom as you can see.

Read the description of each frog and each mushroom. Make a cut-out picture of each, the frogs green and the mushrooms tan, and mount on colored construction paper to make a Spring poster. Look for these frogs and mushrooms outdoors, and beware of the poisonous mushroom!

1. The leopard frog—back green with darker green spots edged with white. He is found around a pool or in a marsh.
2. The spring peeper—tiny green frog with a dark multiplication mark on his back. He begins to sing early in the Spring as he sits on a lily pad.
3. Green frog—bright green head and shoulders with a fold of skin down each side of his back. His ears are purple.
1. Destroying Angel—the most poisonous of all mushrooms. Note the frill around the stem and the cup from which it springs, called the "death cup." It does not grow on wood.
2. Common meadow mushroom—cap whitish, often streaked with brown. The pink gills turn brown later. It also has a collar-like ring. Found on lawns and in meadows, never in woods.
3. Sponge mushroom — found in orchards in the spring, or in the open woods. There are reddish-brown pits in the cap which is quite ridgy.



GREEN FROG



GOOD

MANNERS

BORROWING

- Be sure to return a borrowed umbrella.
- Do not borrow without the owner's permission.
- Which articles should not be borrowed?
- Are you courteous when you refuse to lend?
- Do you say "Thank You" when you return a borrowed article?
- If a borrowed article is damaged while in your possession, what should you do?



STUDY OF COLOR

by

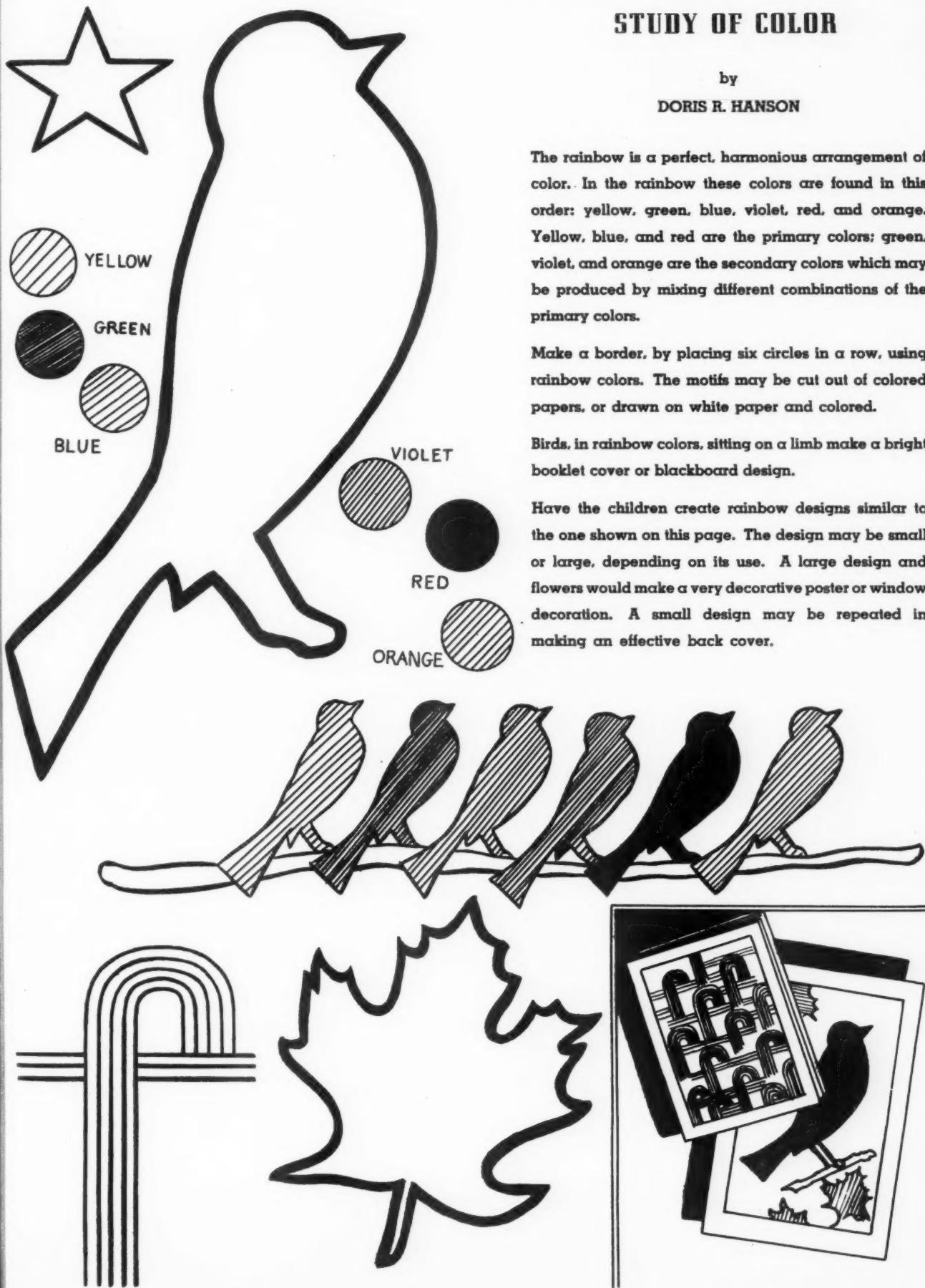
DORIS R. HANSON

The rainbow is a perfect, harmonious arrangement of color. In the rainbow these colors are found in this order: yellow, green, blue, violet, red, and orange. Yellow, blue, and red are the primary colors; green, violet, and orange are the secondary colors which may be produced by mixing different combinations of the primary colors.

Make a border, by placing six circles in a row, using rainbow colors. The motifs may be cut out of colored papers, or drawn on white paper and colored.

Birds, in rainbow colors, sitting on a limb make a bright booklet cover or blackboard design.

Have the children create rainbow designs similar to the one shown on this page. The design may be small or large, depending on its use. A large design and flowers would make a very decorative poster or window decoration. A small design may be repeated in making an effective back cover.



PROGRESSIVE ART IN PROGRESSIVE SCHOOLS

by
HAROLD R. RICE

*Critic Teacher of Student Teachers, University of Cincinnati,
Art Supervisor, Wyoming Public School System, Wyoming, Ohio*

BIRDS AND NATURE

This month's article will deal with a craft unit that can be carried out in almost any grade of the elementary school. With the return of the birds in the spring, the teacher is afforded an excellent opportunity to combine nature study and art. The following suggested units involve a detailed study of the bird, its "geometric" make-up and bird coloring. They can be considered separately or be combined as a class project with the group divided into sections. Each section would be responsible for one of the units.

THE GEOMETRIC PARTS

Although there are any number of bird types, the characteristics of birds are quite similar. Observations of birds and studies of their pictures will disclose about seven simple geometric parts to every bird. The head, body, and wing of the bird are similarly shaped. The head is oval or egg shaped, the bill being added to the smaller end (Fig. 1-A). The body is about three times as large as the head and is of the same egg shape (Fig. 1-B). The wing is also egg shaped, but is long, narrow and rather pointed at the narrow end (Fig. 1-D). The tail is triangular in shape, with the point removed (Fig. 1-C). Legs are long narrow rectangles (Fig. 1-E); while the foot is a small triangle about twice the size of the triangular bill (Fig. 1-F and G).

The bird when assembled, will resemble the simple figure shown in Fig. 2. Of course, the parts can be juggled about to place the bird in the desired position. Exaggerated bills, tails, and so on, add individuality to a picture of an imaginary bird (Fig. 3). Preliminary sketches and studies must be made after the above information has furnished a foundation. Then the pupil is not handicapped when possible projects are considered, or when he enters into more complex parts of the unit.

HOUSE NUMBERS

With spring in the air, there is the urge to remove the reminders of winter and replace them with something bright. Housecleaning in the home brings out the paint can and the porch furniture. Spring flowers are planted. Pupils can do their part by making an attractive house number for the front lawn. Birds

offer the basis of the design. Several things should be remembered:

1. The numbers should be easily visible from the street.
2. The colors should be bright to attract the eye.

Make preliminary studies on paper, 12" x 18", or larger. When a satisfactory design is obtained, color it with crayons. It is best to use checked paper and lay out the letters to obtain the proper size and spacing.

After the class discusses the design, and corrections are made, the paper pattern is cut. Trace the pattern on a piece of thin, strong wood, preferably plywood. Cut out the design with a jig-saw. It is now ready to be painted. Small children should use flat house paint or cheap enamels as they require no "fixing," being waterproof. Older children will prefer poster paints. After the poster paint is thoroughly dry, apply a coat of clear varnish. The colors will streak if the paint is not dry.

Drill a small hole through the finished house number so an upright base may be bolted to the board. Cut a point on one end of a piece of wood about

1"x1"x18", to be driven into the ground, and bolt to the back of the finished house number. It is recommended that this upright be made at home, as it is dangerous for small children to carry pointed sticks, which would be the case if completed house numbers were carried home. Place the numerals on the base of the bird design (Fig. 4 and 5). Some pupils will prefer to place the numerals on the bird's body (Fig. 6). In this case, the background should be kept plain and subordinate to the numerals.

FEEDING STATION

The feeding station project will prove enjoyable (Fig. 7). To make:

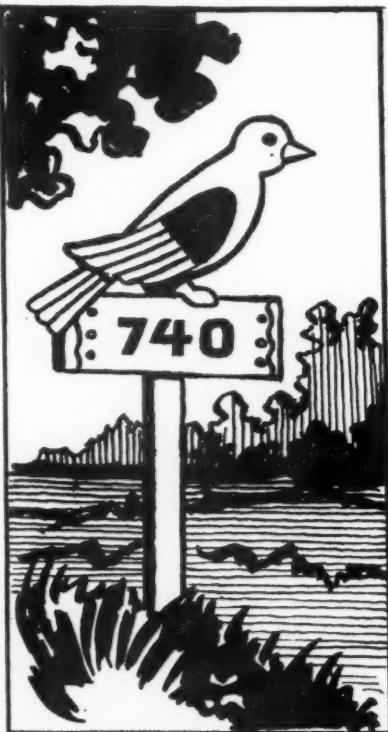
1. Obtain a wooden box about 1" deep and 4" to 6" square.
2. With the bird as the main motif, create a design for the sides of the box. Cut the birds from thin wood and glue or nail to the sides of the box.
3. Paint with enamels. When dry, center over a stake, 1"x1"x18", which has been driven into the ground. Drive a nail through the bottom of the box into the stake to hold the box in place.
4. In the center of the box put the lid of a baking powder can and fill with water. Add scraps of bread, grains of wheat, or chopped corn.

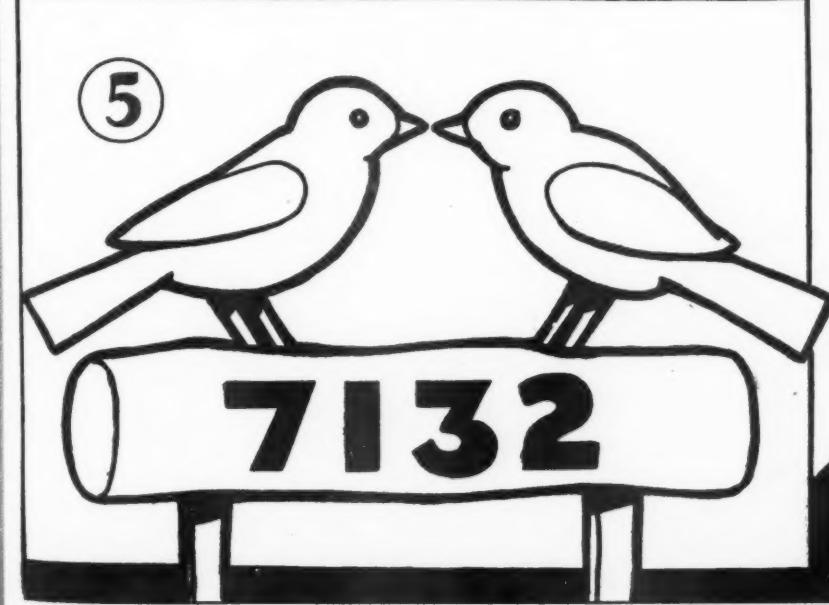
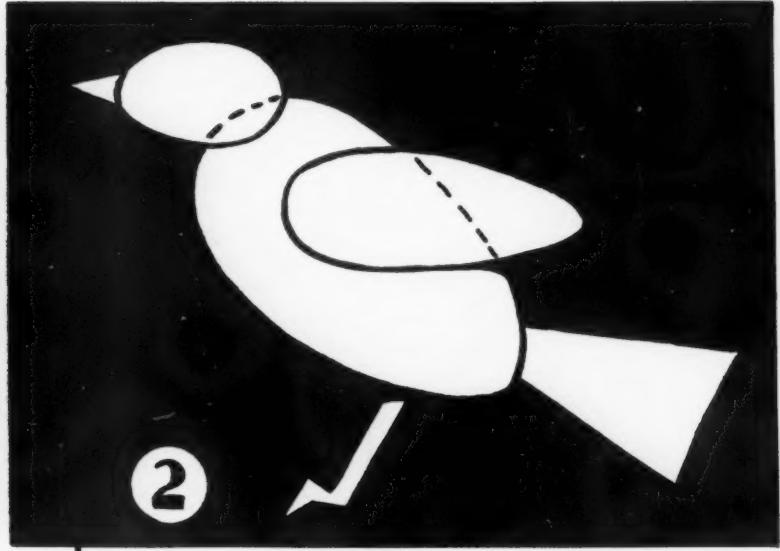
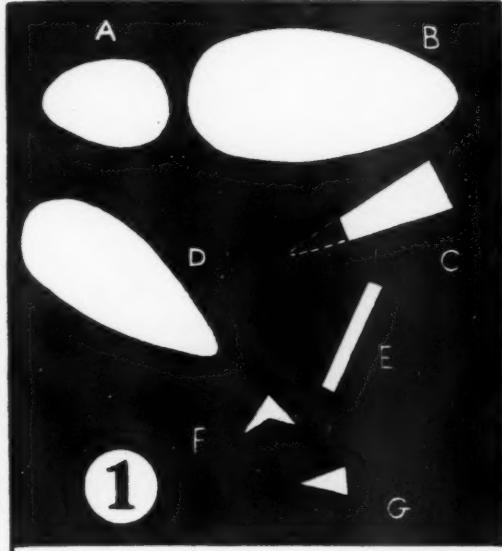
BIRD BATH

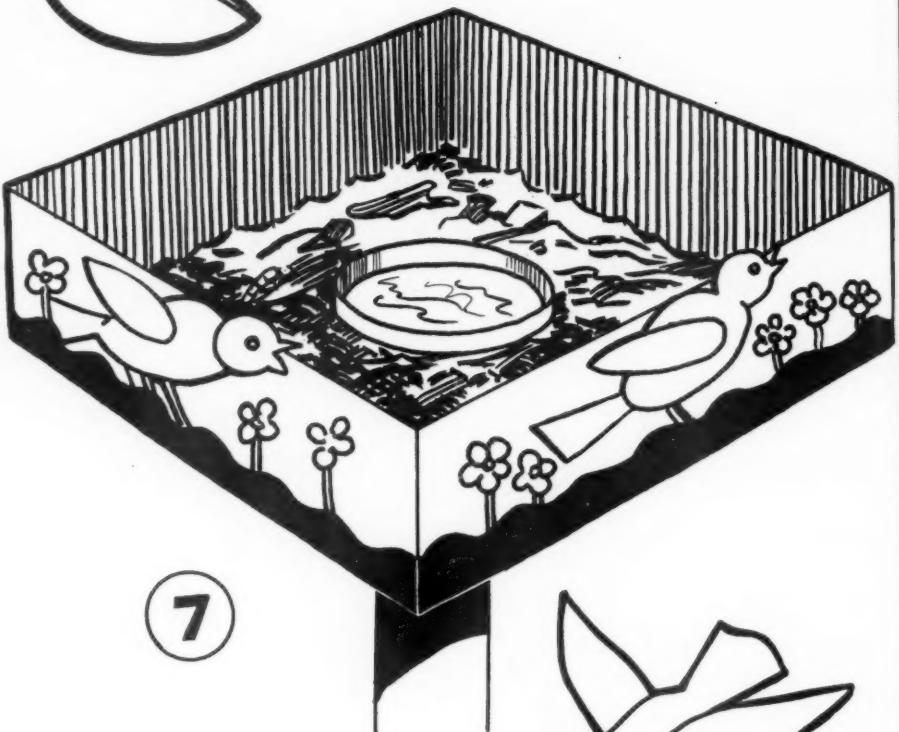
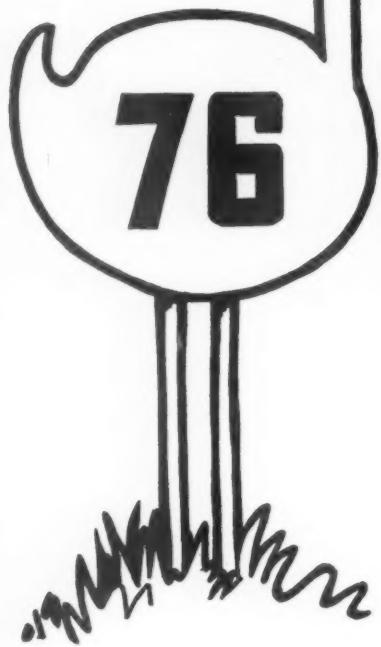
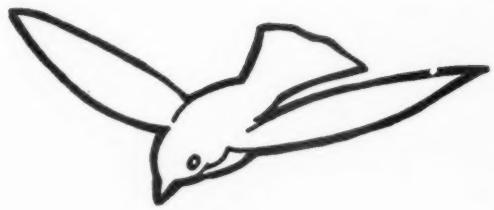
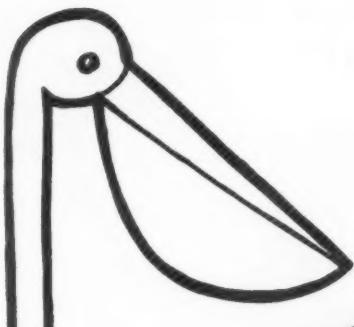
Similar to the feeding station in construction is the bird bath. Use a rectangular cake pan and build a box to hold it. To decorate, attach birds cut out of plywood. Or, design a long legged bird for each side of the box. The first type of bird bath is nailed to a stake driven into the ground, while the legs of the birds on the second will serve as stakes. The bath should never contain more than an inch of water and should be filled frequently (Fig. 8).

Build a feeding station and bath for the school grounds. Appoint Observation Committees to visit the bird haven and report their findings to the class. Observe: (1) the number of birds that visit the spot, and (2) the different kinds of birds.

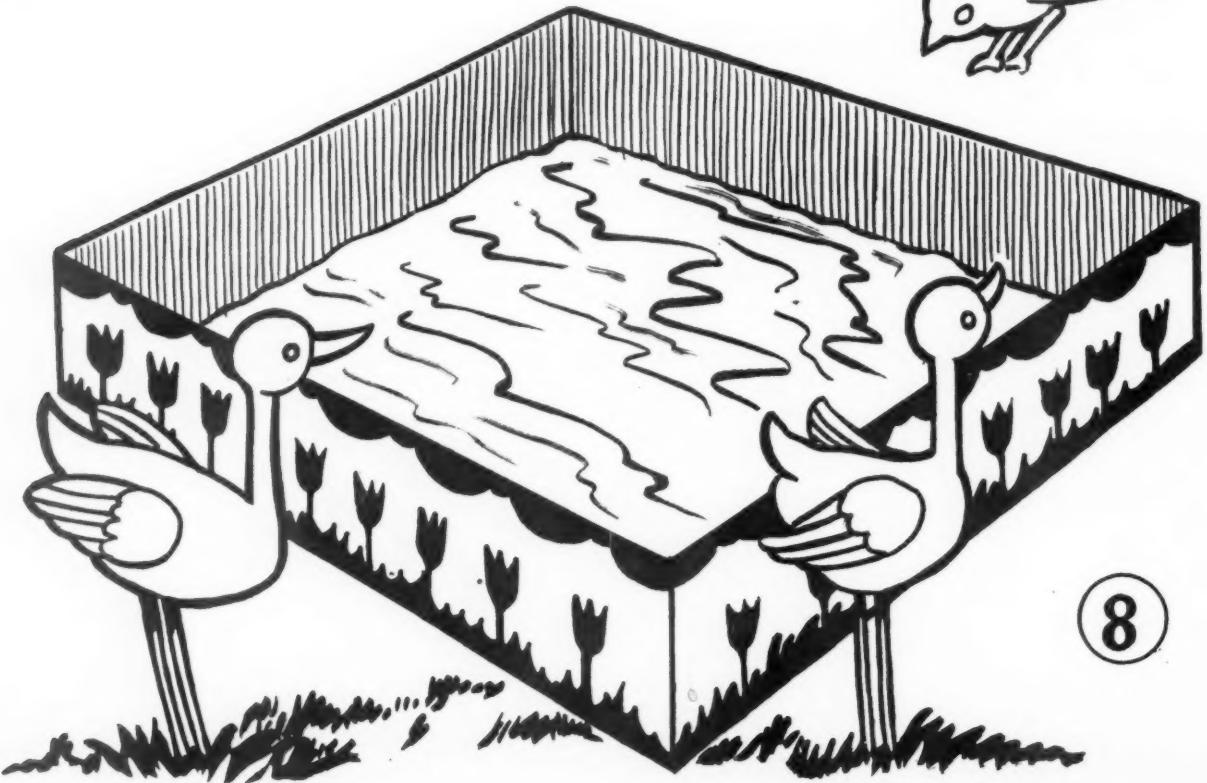
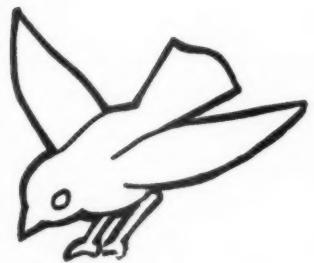
Note: Readers are invited to write the author of this article. State your problem and the type of articles you wish to be presented in future issues.



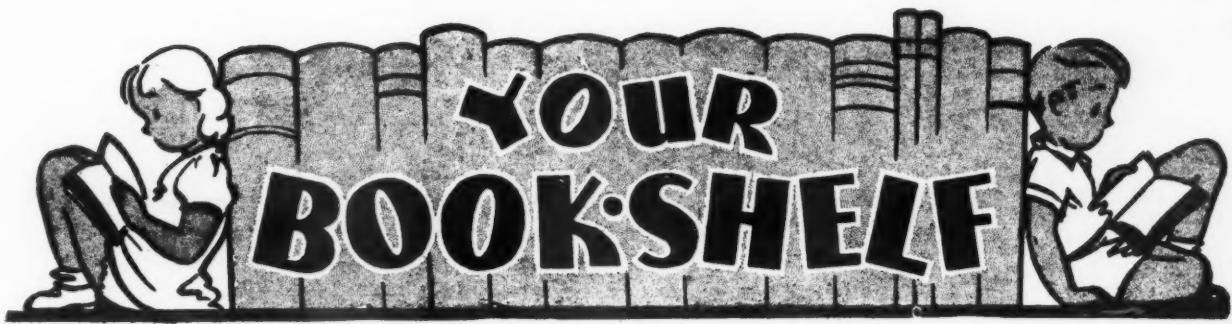




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8



Good books are to the young what the warming sun and refreshing rain of spring are to the seeds which have lain dormant in the frost of winter.

—Horace Mann.

A little less than a century ago, Frederick Froebel, the kindergartner, whose birthday falls on the twenty-first of April, used symbolic aspects of Nature and the ideals of the home to develop his theories of education. He held that the child's emotional reaction is deepened by the use of stories, pictures, and poems centering on some actual experience. Since his day, schools have taken up the use of stories, and even universities have added story-telling courses to their curriculum. "It is an error," says Durant, "to suppose that books have no influence; it is a slow influence, like flowing water carving out a canyon, but it tells more and more with every year."

Black Beauty, by Anna Sewell has done its full share in character training with its stress on kindness. Several editions are available which present the autobiography of this horse along with appropriate illustrations.

(The John C. Winston Company. Philadelphia — contains questions for discussion — \$.88)

(E. P. Dutton & Company. New York. \$1.00)

(Dodd, Mead & Company, New York. \$2.00)

(Frederick A. Stokes Company. New York. \$2.00)

A modern story about horses treats of the range broncos on a Texas prairie. M. and C. W. Gauss are author and artist of *Smasher and Kickup*; they have lived in the West for many years, so know all about horses. Kickup is not a good horse and he teaches a young colt to run away and kick. When this colt is caught by the rope of a young cowboy, Mike, he knocks the cowboy down, thus gaining the name of Smasher. Mike wins the love of the bronco and Smasher becomes a good horse, but not before he has raced with the roamers who are free

on the range. Having been sold to a feared lion keeper, Smasher is willing to allow Mike to ride him in the winter rodeo.

(Albert Whitman & Co., Chicago. 32 pages. \$1.00)

A series of thirty books for children in the third and fourth grades is being prepared by the WPA Pennsylvania's Writers' Project and is sponsored by the Philadelphia Board of Public Education. *A Trip on Many Waters*, and three other readers in the series will prove useful in the study of the Water Cycle—*Snow, Glaciers, and Icebergs*—*The Book of Stones*—and *The Ladder of Clouds*. All of the books are illustrated. (Albert Whitman & Co. Chicago. 33 to 48 pages. \$.50 each.)

Our Little Neighbors at Work and Play by Frances Carpenter, will furnish material for a study of Cuba in connection with Pan-American Day. In fact, there is a picture of children from other lands talking over the radio and sending messages to American children in the United States. Any book by this author promises decisive help to teachers and interesting stories for children. She has traveled extensively and is able to make the child life of other countries real to the young reader. There are suggestions for creative activities and a simple introduction to map study for children about to begin the study of geography. The book consists of four large units; Indian, Pioneer, Modern American, and Foreign Life. There is special emphasis on the functions of sun, land, and water and the effect of climate in determining the types of homes a child may have. (American Book Company. New York. 240 pages. Illustrated. \$.96)

Here is a story of an actual voyage around Cape Horn, made by two children, Commodore and Ann. *Two Sailors and Their Voyage around Cape Horn*, by Captain Warwick M. Tompkins, is written by a man who served in the war-time Navy and who has made many voyages on merchantmen and yachts. Robert Freeman, sailor and artist, drew the end papers which bear

a picture of the "Wander Bird" and the sailors' course around Cape Horn. This is the course taken by the old explorers and by the famous clipper ships who sought the gold lands of California. This same artist has made several pen sketches which are scattered throughout the book along with many photographs. Their father, the Skipper, and the two children love the "Wander Bird" with deep affection. The whole family plot the course, the Skipper's pencil pointing the track in use before the building of the Panama Canal. Bosun William liked to brag that the two children "wuz born sailors, and they's been brought up sailors."

The book is full of action and excitement as the trip is described in the language of sailing, and then: "Down jib! Down fore sail!" called the Skipper, and stripped of her last sails, the "Wander Bird" and the two sailors were home from Cape Horn, and the chronicle is ended. This is a Junior Literary Guild Selection.

(The Viking Press. New York. 192 pages. \$2.50)

Strange Birds and Their Stories, by Hyatt Verrill, profusely illustrated by the author, belongs to a series of Nature stories which will start children both to observe and to read books concerning the things about them in their own world and those they may never see in the outside world. The language is so simple young people can read for themselves and older people will be fascinated by the pictures and descriptions of feathered friends. As a naturalist and scientist-explorer, Mr. Verrill tells of many strange and interesting birds with which the average person is not familiar.

(L. C. Page & Company. Boston. 53,000 words. \$2.50)

See the review of *The Golden Plover and Other Birds*, by Arthur A. Allen, in the May, 1939 issue. These "bird" biographies are unusually charming, and the colored plates and photographs make it a book well worth owning.

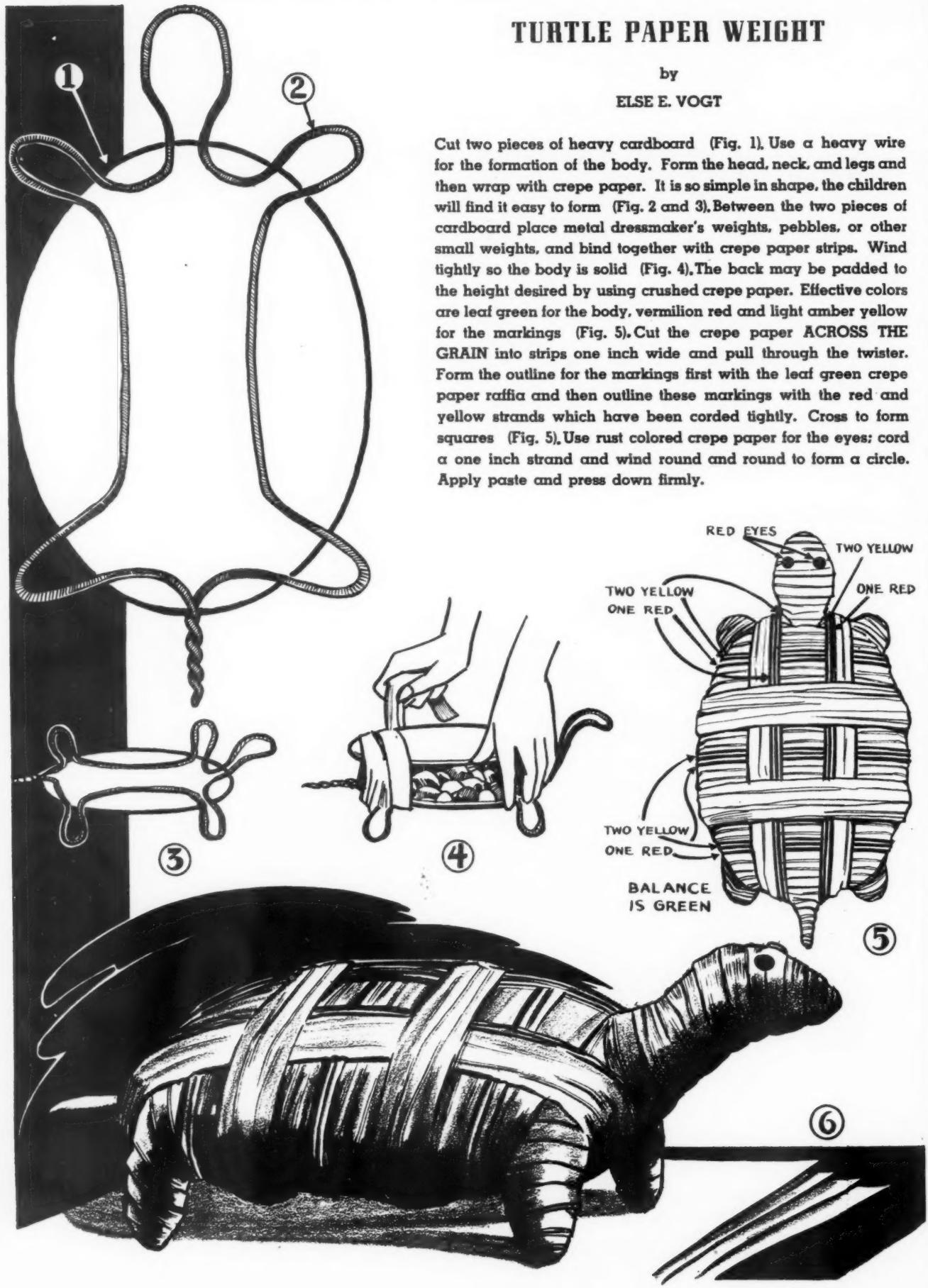
(Comstock Publishing Company, Inc. Ithaca, New York, 324 pages. \$3.00)

TURTLE PAPER WEIGHT

by

ELSE E. VOGT

Cut two pieces of heavy cardboard (Fig. 1). Use a heavy wire for the formation of the body. Form the head, neck, and legs and then wrap with crepe paper. It is so simple in shape, the children will find it easy to form (Fig. 2 and 3). Between the two pieces of cardboard place metal dressmaker's weights, pebbles, or other small weights, and bind together with crepe paper strips. Wind tightly so the body is solid (Fig. 4). The back may be padded to the height desired by using crushed crepe paper. Effective colors are leaf green for the body, vermillion red and light amber yellow for the markings (Fig. 5). Cut the crepe paper ACROSS THE GRAIN into strips one inch wide and pull through the twister. Form the outline for the markings first with the leaf green crepe paper raffia and then outline these markings with the red and yellow strands which have been corded tightly. Cross to form squares (Fig. 5). Use rust colored crepe paper for the eyes; cord a one inch strand and wind round and round to form a circle. Apply paste and press down firmly.



APRIL TRAVEL QUIZ

By CLAIRE VANDERPLANK

By popular request we are confining this month's Quiz to one section of the country—the West. That should make it very easy for our west-of-the-Mississippi readers—but we hope all of our readers will find it just as interesting.

BACK HOME BY WAY OF THE AIR LINES

by COLIN CAMPBELL

Many states combine Arbor Day and Bird Day. If your state does not, then observe Wilbur Wright's birthday on April 16, by contrasting travel by plane with the return trip of the birds. Make a chart showing the arrival of the birds and compare them to airplanes. Even very young children are now familiar with the words which describe the different parts of an airplane. Draw a bird on the board and show that the bird, like the plane, has main wings which support him in the air; the body, like the fuselage, holds the motor and carries the cargo while it furnishes a backbone for strength; the tips of the wings are the propellers which provide the driving force, propelling the bird through the air; the tail is the elevator which guides the bird upward and downward, and the rudder which controls direction from right to left; and the legs and feet are the landing gear.

The bird is his own pilot and is taught by instinct to handle the controls. From the Observation Turret he checks position by the sun and stars, having a power plant and instruments in his Control Cabin. His fast beating heart pumps the fuel, stored in his pontoons, up to the wing tanks and engines. He is streamlined in the modern manner, but unfortunately, unlike the modern plane, has little weather protection. Robins, caught by the unusually cold weather in the South this winter, fell dead in great numbers because they could not refuel sufficiently before starting for their northern homes.

Have the children make a Log Book which lists the Ship (name of bird)—Position (place from which bird starts north)—Time (starting and landing time)—Comments. For instance, March has brought the robin, bluebird, the duck and goose (the amphibian planes which land both on earth and on the water), the meadowlark, field sparrow, red-winged blackbird, and the mourning dove. Note the time they were seen in the spring in your neighborhood; look up the place from which they started north; and comment on their flying powers and characteristics. This can be done because each bird follows the same route over which his parents flew.

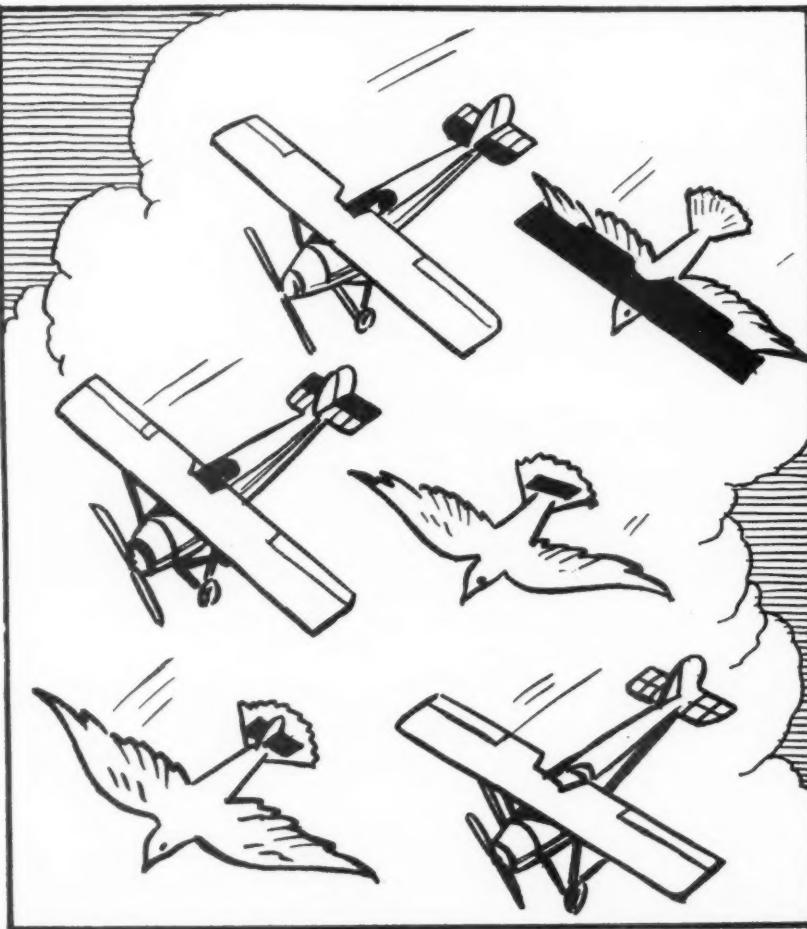
If birds were awarded medals, the Arctic tern would receive the award for long distance traveling. It scoops a nest out of the snow as close to the

North Pole as it can get, and as soon as the babies fly, off they start for the Antarctic continent, a mere eleven thousand miles on the wing. Then when the South Pole babies are born, back they start for the coast of Maine and on up to the Arctic regions.

Most of the birds from the extreme northern part of the continent travel to the eastern coastline and go on to South America by way of Florida and the West Indies. The birds west of the Rockies also fly southeast to join the eastern birds on their journey south and return with them in the spring. Coming north, the first birds arrive in March. During the three succeeding months bird families return to their summer haunts, always at a definite time. The chipping sparrows and other seed eaters arrive in April and, as it grows warmer, the insect-eaters follow. These are the swallow, thrush, warbler, wren, catbird, ruby-crowned kinglet, and chimney

swift. May is really the warbler month, but the myrtle and palm warblers are April arrivals. The white-breasted nut-hatch, the robin, and the bluebird have already built their nests.

Birds are international in spirit. The cliff swallow winters in South America, following the land route through Central America and Mexico. The golden plover of the Pacific coast prefers to winter in Hawaii, but the golden plover who nests on the shores of the Arctic ocean winters in Argentina for a time, then flies to northwestern South America. Returning north, he goes through Central America, or over the Caribbean Sea, to the Gulf of Mexico, which he crosses to migrate up the valley of the Mississippi. Homing from the Argentine to the Yukon, from Southern Rhodesia to the slopes of the Cumberland, flying mile on mile, by day and night, across a pathless sky, so come our feathered friends.







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TEACHER'S CORNER

NEWS AND DISCUSSION OF INTEREST TO TEACHERS

We are here to serve the teachers.
Help us to help you!

Teachers are invited to send to this department ideas and suggestions that will be helpful and interesting to teachers. One dollar will be paid for each contribution accepted. Send your ideas and suggestions for this page to Teacher's Corner, JUNIOR ARTS AND ACTIVITIES.

During the past year many teachers submitted their ideas and suggestions for this page, as well as many of the projects that have recently appeared. From the many letters we have received, I know our subscribers have found the suggestions very helpful.

We are very grateful for this cooperation. It has helped us build a more useful and helpful service to you.

BIRD STALKING

by

MRS. J. GILMER CAPPES
Tipton, Oklahoma

Boys in nature and biology classes take a great interest in bird and animal stalking. Make a rather thin mixture of plaster of Paris by adding water. The mixture is used to fill the tracks of birds, rabbits, and other rodents found near every stream. In little more than an hour, the casts may be lifted from their places and carried back to the laboratory, or museum.

THE GEOGRAPHY CLASS BECOMES A CLUB

by

KATHRYNE McRINNE
Mrs. Pennsylvania

The geography hour is a busy time in every schoolroom because many things are needed for the work which is to be done. I have found that by making the geography class a Club, work can be so organized that books can be taken from the cupboard, pictures and maps put up, crayons and outline maps passed, and all plans made quickly and efficiently.

A chairman and committees will help greatly in making a class into a Club. These may be appointed or selected at the beginning of each division of work. In that way the offices may be passed around among the members of the class. Some of the committees which might prove useful are:

1. Bulletin Board Committee to arrange material on the bulletin board.
2. Picture and Map Committee to select pictures, get the maps needed for the

day, and draw outline maps on the blackboard.

3. Exhibit Committee to arrange exhibit material brought by pupils or owned by the school.
4. Excursion Committee to plan trips for the class.
5. Debate Committee to plan debates.
6. Bibliography Committee to list books in the school library which contain reading material on the topics to be studied, and the pages on which the information may be found.

A HALL OF FAME FOR TREES

by

ELEANORE WEIR
Escanaba, Michigan

After carrying out your project as described in the September issue, 1939, we read that The American Forestry Association has established a Hall of Fame for Trees. We gathered material and showed the trees in our Hall; famous trees were drawn in a frieze with illustrations; some mark them on a map. We took the famous trees mentioned in history, such as the following: Mark Twain Oak in Tuolumne, California, under which he wrote: Webster Cottonwood at Goshen, New York, where the closing chapters of the dictionary were written; Kit Carson Tree near Carson City, Nevada, where he carved his initials; Custer Tree in Montana, scene of his Last Stand; General Sherman's Sequoia, in California, oldest known tree, over 4000 years in age; The Big Cypress near Sanford, Florida, next in age, 3,500 years old. Also, there is the Penn Treaty Tree, of Pennsylvania, the Washington Elm of Cambridge, Massachusetts, and the Lincoln Memorial Tree, at Decorah, Iowa. (For other famous trees, see *Trees as Good Citizens*, by C. L. Pack.)

AN UMBRELLA DEVICE

by

LUCILLE KNOX
Atlanta, Georgia

Second grade children need a great deal of drill work. Last April I drew a picture of an umbrella on the board. Down the ribs I placed the numbers one to twenty-five in order; on the handle I placed the number with which they were to be combined. At the right of the picture I wrote the names of the pupils in the grade. When I called on a child to recite, if he answered correctly he became teacher. He asked

QUOTATION FOR THOUGHT

The happiness of your life depends upon the quality of your thoughts.

—Marcus Aurelius.

another child to recite and when he had done so, erased the child's name from the board. This continued until all the names were erased and another child became the teacher. In this way I combined number work and the recognition of each child's name by every other child.

A WORD-OF-THE-WEEK CLUB

by

AMY PAUL
Tamaqua, Penna.

To aid in reading and spelling, I started a Word-of-the-Week Club in my first grade the second half of the school year. One reading period each week, I would choose a new word, place it on the blackboard, and explain its meaning. Then I would have the children take turns in using the word. Each simple sentence a pupil made, correctly using the word, was written on the blackboard and copied by each pupil. In this way, all of the children participated, and it was much easier for all to recognize the new word and spell it correctly.

Every week brings inquiries from teachers who want to know where they can purchase various material for classroom projects. If these teachers, and all others interested in handicrafts, will write to this department, we will see that they receive the New Leisurecrafts catalog which lists material for every handicraft need, from aluminum to zippers.

How many masts has a brig?

Would you recognize an arbalest if you saw one?

These are only 2 of the 200 interesting questions answered in the "New Quiz and Picture Game." You'll find this game a fascinating means of adding to your vocabulary and store of knowledge. You can get a copy free by writing to this department. We have never before seen so much information offered for a penny post card.

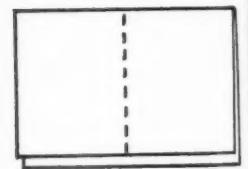
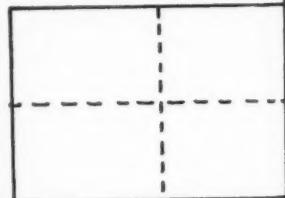
GOING PLACES THIS SUMMER?

We'd like to help you plan your trip. Drop us a post card, listing the places in which you are most interested and how you plan to go, and we'll see that you get all the information you need.

by
IDA NELSON
Spencer, Nebraska

Here is a spelling book that will add interest to the spelling lesson and encourage your pupils to work harder for perfect grades. To make the inside page take a large sheet of white paper and make a fold each way through the center (Fig. 1). Mark the exact center (Fig. 2) and place the folded paper over a piece of dark blue construction paper which has been cut to extend a little beyond the white on all sides. The blue paper forms the cover. Sew through the center and fold as a book. Slit the sheets at the folds. This may be simplified for the children by stitching the centers on a sewing machine.

Have the pupils decorate their covers during the art period. Make a skyline silhouette of light colored paper, and paste on the dark blue near the bottom. For each perfect lesson in the book a star is placed in the sky.



A TALE OF THE

GLADYS M. BELTZER
BASSETT, NEBRASKA



pirate, resting at his 's
Was sadly discontented.

He planned to sail the
If no luck prevented.

His eyes were # and very bright,
His power no man could

And all this pirate chief's delight
Was sailing round for pleasure
His voice would rumble from the
To bid his men assemble.

"Tis I who am a pirate bold!"

He called, and they would tremble.

"We're off to !" he would cry.

"Hoist anchor! Let's be going!"

"The tide will if we lie by-
Set sail! The wind is blowing!"

His crew, they to stay ashore.

But he was starting early.

'Twas ↗ they should abhor

This pirate rude and surly.

They grew impatient, after while.

With ropes and 's they bound him.

Then dropped him on a desert isle,

And no one ever found him.

COAL IN ANTARCTICA?

On Admiral Byrd's last Antarctic expedition, rocks found at the summit of a glacier which the explorers climbed, led them to believe that the coalfields of that continent may be among the largest in the world. Previous expeditions had discovered coal at other places in Antarctica. This finding has an important bearing on the economic future of our country, provided the United States advances its claims to the territory discovered by the present Byrd expedition. Three hundred miles of hitherto unexplored coastline have been added to the charts of the Antarctic. This is the long sought South Pacific coast of Antarctica, goal of explorers of many nationalities for the last one hundred and sixty-six years.

From the air this territory was mapped, along with a vast mountain range and an ice-covered island eighty miles off-shore. Admiral Byrd, his scientists, and other explorers have already carried out about half the program laid out for their first season there. As much work as possible must be accomplished well in advance of the darkness that descends when spring arrives in this part of the world. It is said, Admiral Byrd's return to take part in the explorations of the second Antarctic summer, will depend on developments. An east base is to be established on the continent's icy rim, south of Cape Horn, with airplane and dog teams providing supplies, for, what Admiral Byrd hopes may prove to be, a stay of at least three years, and perhaps six.

The United States is not expected to lay claim to any territorial discoveries for several years. The State Department holds that discovery must be followed by settlement. This would prove difficult in Antarctica. Should settlement prove possible with development of the country so as to contribute to the support of the settlers, what might be the result? There are seven great occupations in which people engage to earn a living. These are fishing, lumbering, agriculture, mining, manufacturing, transportation, and commerce. Lumbering and agriculture must be ruled out in a consideration of possible settlement in Antarctica. We are called a manufacturing nation and two things besides skilled workmen are necessary to modern manufacturing—raw material out of which to make goods, and power to drive machinery. Among the raw materials, minerals are most important. Explorations have already held out hope that thousands of acres of antarctic land

are underlaid with bituminous coal. Ore found there is of the type usually associated with deposits of gold, silver, platinum, lead, and zinc. Whalers have made a fortune since 1905, selling whale oil to American soap and perfume manufacturers. Without some of the minerals mentioned above, many of our industries would be crippled.

Power will be needed to dig any treasures which Antarctica may have hidden beneath the great ice cap. It is said that competing nations are counting on the advances possible in applied sciences to make the extraction of this antarctic wealth possible. Those interested in Admiral Byrd's expedition point to the unexpected economic contributions of Alaska and Spitzbergen. Alaska returned billions of dollars in gold, lumber and coal, for the price paid Russia.

When Alaska was bought, there were no airplanes or tractors as now. In the proper season in Antarctica, these can be a great help in overcoming the handicap of the ice, that blocks the approaches of places sought. The five passenger airplane carried on the top deck of the Armour Institute Research Foundation's snow cruiser, has already made survey flights to make aerial photographic surveys and upper atmospheric measurements of cosmic rays. The snow is still too soft for the thirty ton cruiser to make explorations, but it will do so, as soon as colder weather offers better traction for the rubber tires. Then it will climb and slide down mountains and cross fifteen foot crevasses.

Power for the snow cruiser is provided by two Diesel-electric generating sets; each set is direct-connected to a 150 horsepower Diesel engine. Just what is meant by "horsepower"? When James Watt, who discovered a cheap way of using steam for power, wanted a unit to measure the power produced by the engine, he experimented with dray horses. He found a good horse can lift 150 pounds 3 and 2/3 feet per second, a rate called "horsepower." It takes one horsepower to make 746 watts.

From what sources come our heat and power? Coal is probably the most important material used in modern industry; gradually, the use of petroleum has been extended and the importance of power made by falling water has become one of the foremost questions of our time. While our supply of anthracite is getting low, we seem to have enough bituminous coal for many cen-

turies, but easily mined coal is growing scarce. The present wars may decide whether the coal supply in Europe and Asia can be depended upon for future use in America. Power can be made by steam in modern plants at approximately one pound of coal per horsepower hour. It has been estimated that our power needs are increasing by more than two million horsepower a year. What of the future?

Thanks to the power to operate their engines, heat to warm the interior of the snow cruiser, and lubrication for their machinery obtained from 32,000 gallons of petroleum products shipped in the hold of the *North Star*, members of the Byrd expedition will be able to proceed with speed and comfort never before equalled in polar explorations. A large shipment of coal was also included in the supplies taken to the land where coal is supposed to be deposited. Packed in 100-pound bags to facilitate shipment and storage, this will be used for cooking and heating at the main bases, with a small supply for use when the snow cruiser makes outings on the trail.

Since the days of exploration and pioneering, the thing most affecting the welfare of our country has been the application of machinery to manufacturing. This is what the Research Foundation of the Armour Institute of Technology has to say of this industrial growth: "Together Science and Industry have played a major role in the penetration of a thousand frontiers. Now, by means of the Snow Cruiser, they are prepared for the assault on the world's last frontier . . . Antarctica."

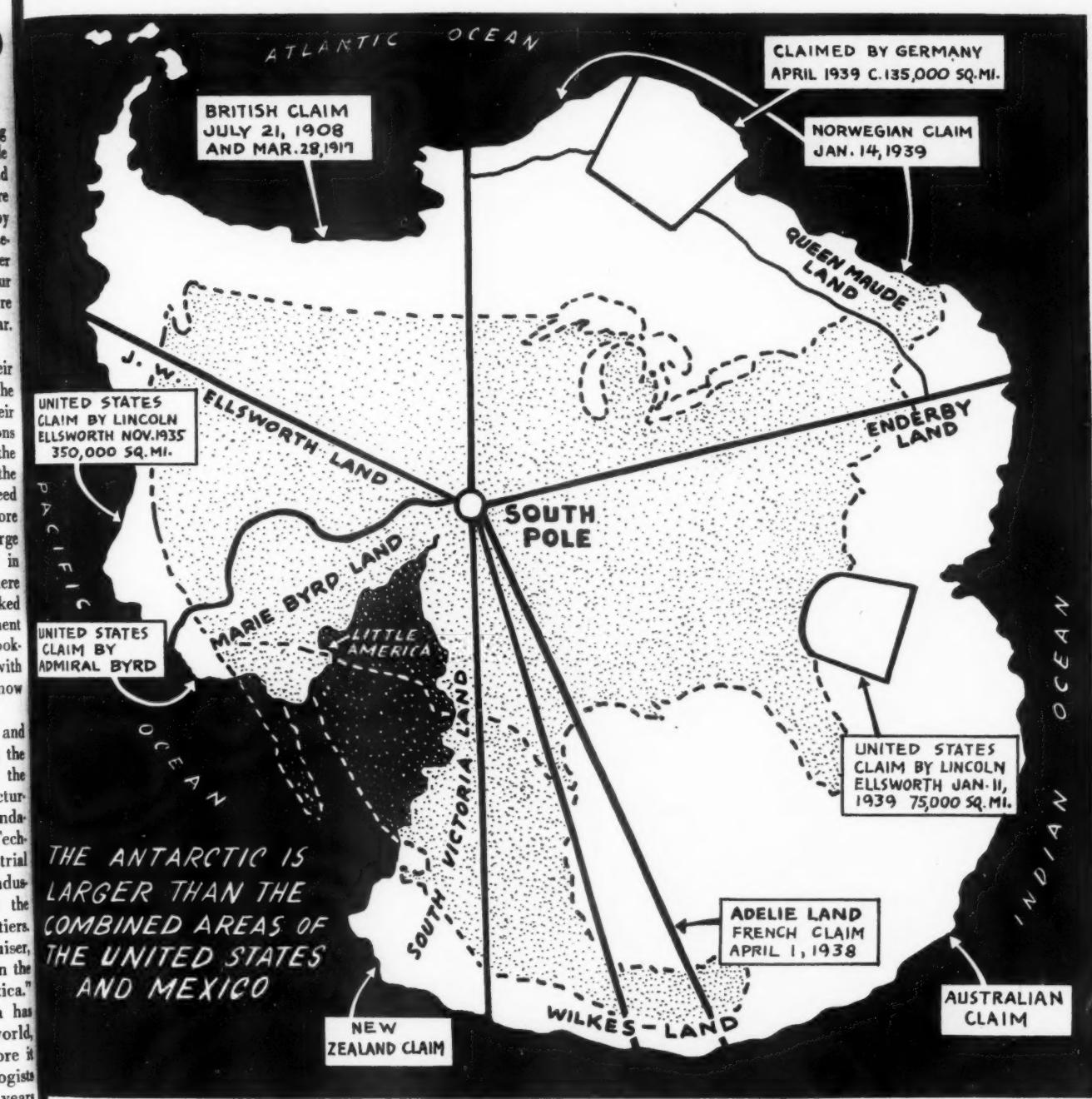
While it is said that Antarctica has the largest coal deposits in the world, it will be many, many years before it will be practical to mine it. Geologists have decided that sixty million years ago, great glaciers swept over land in the region of the Antarctic, where, in valleys, were ferns, trees, and swampy vegetation. Plants were scarce on the wind-swept hills. It is hoped a study of the rocks which compose the lofty mountain ranges that traverse Antarctica, will solve one of the greatest problems regarding the earth's structure. The connection of the two sides of Antarctica, between the Weddell and the Ross Seas, may prove to be solid land rather than a sea-level channel. Among the large and small islands of the Archipelago, black rocks protrude from the snow and ice. At Cape Barne is a volcanic pillar, an enormous column of lava.

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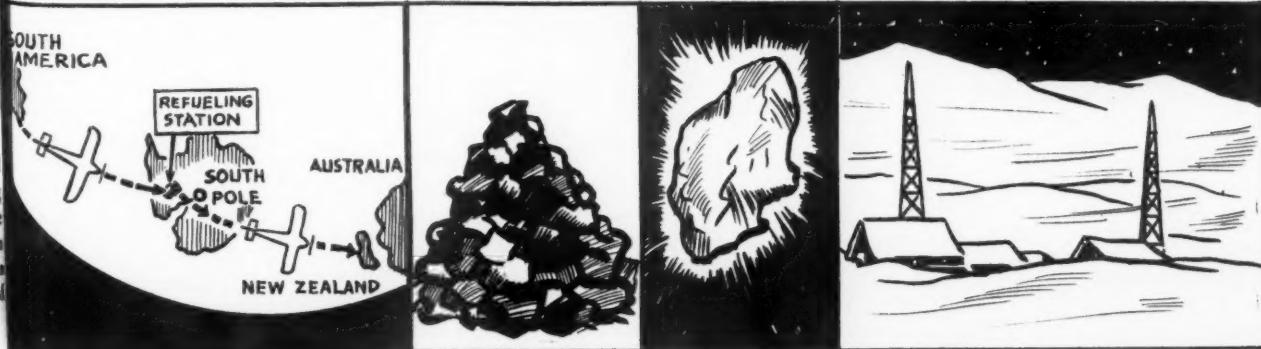
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REASONS FOR ANTARCTIC CLAIMS

AVIATION • COAL-MINERAL ORE • WEATHER FORECASTING



BLACK BEAUTY

There are certain tendencies in the reading interests of children that change as they gain experience. By the time the boy or girl is nine or ten years of age, the mechanical part of reading has been mastered, and a curiosity about things outside his own environment is developed. The world of fancy is left and they turn to stories of the real world. Boys and girls retain their earlier fondness for animal and nature stories and have been found to have a particular liking for such books as *Black Beauty* and *Beautiful Joe*. Perhaps the boy's interest by the time he reaches fifth and sixth grade is not so keen for anything that suggests sentiment, and *Black Beauty* has its share, but all children love animals.

It is one of the old classics, for several generations of children and animal lovers have read it, as it was first published in 1877. There is an argument among critics as to whether the book is good literature and worthy of a place on school reading lists, since the necessity for propaganda favoring the care and consideration of horses is

a thing of the past. But children take a broader view of books in choosing what they like, with sympathies and intuitions often lost with advancing age. So, regardless of discussion, the children continue to read and enjoy this book about a beautiful thoroughbred horse. Some have called it a tract and others, the *Uncle Tom's Cabin* of animal stories.

The book was written by an English-woman, Anna Sewell, shortly before she died, in the hope that it might influence people to be kind to animals. All through the story is the suggestion that those who are well bred are gentle and kind. Black Beauty tells his own story. He recounts how as a colt, he had grown rough in his play with the others in the field, and his mother pointed out that the colts who had not learned good manners were the ones to kick and bite. He never forgot his mother's advice to grow up gentle and good and never acquire bad ways. When he fell into the hands of a cruel owner, like the thoroughbred he was, he kept up his courage, and tried to do well the work expected of him. The good home in which Black Beauty hoped to end his days is a happy contrast to that period of sadness and hardship in the story.

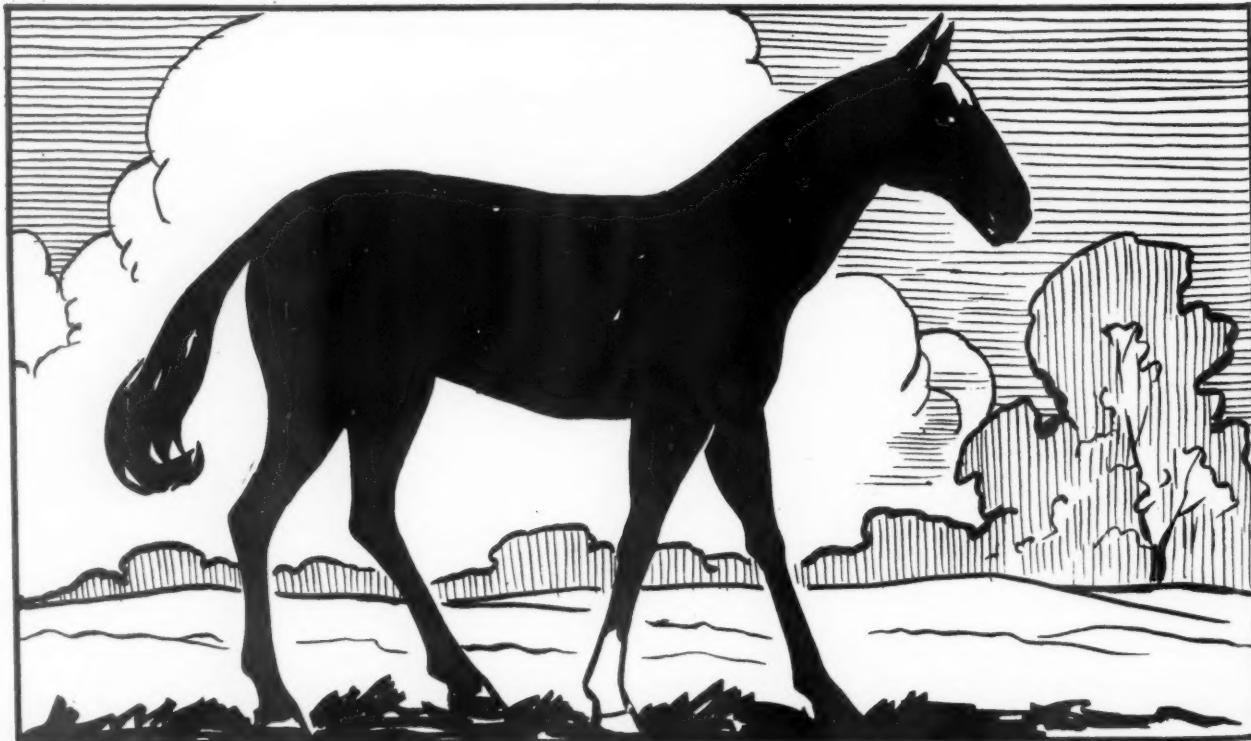
Black Beauty attributes his good qualities to the kind treatment of those who first trained him. It is a pleasant ending to the story, to have the beautiful horse finally have owners who are friends of the master and mistress he had loved. Black Beauty was a very hand-

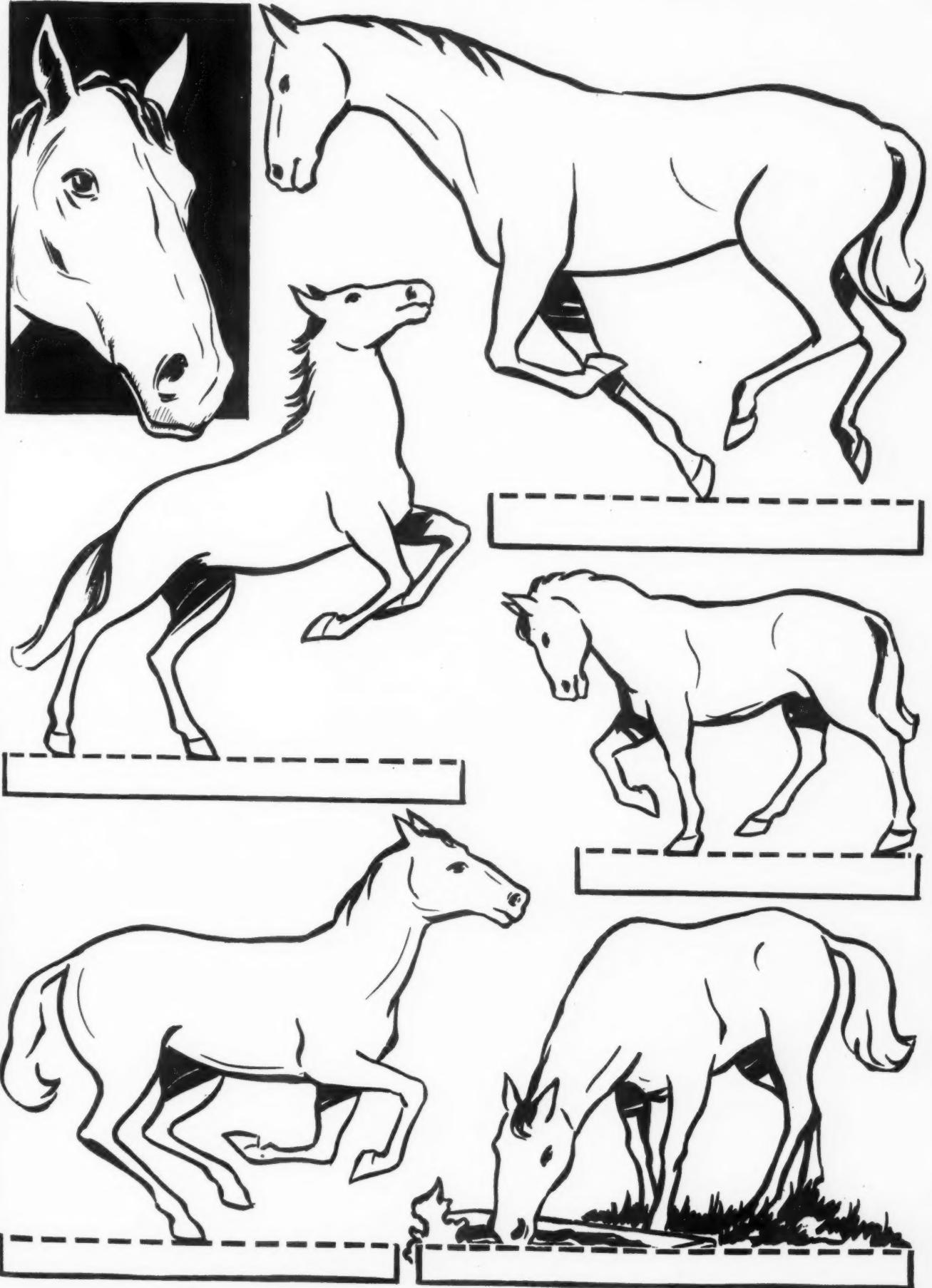
some horse with a white star in his forehead. But the author has stressed the intelligent response to orders, and how a fine horse repays, in willing service, the sympathy and companionship extended by human friends.

By 1890, ninety thousand copies of the book had been sold and it had been translated into French, German, and Italian, so great was its vogue. It is doubtful whether any story about an automobile or plane will ever rival this record.

How to Draw a Horse:

The teacher makes a large drawing of a horse on the blackboard and points out the two lines which show the characteristic slope of the back and neck. These are of equal length. Next, show how lines are added to block the shape of the head; then, how two vertical lines are drawn to show the position and length of the legs. Having traced these lines on the blackboard drawing, call on pupils in turn to draw one line, then to add characteristic lines as needed. Call attention to the fact that if the neck-line is divided in half, the correct place to draw the lines for the legs can be located. First draw the leg lines much longer than they should be and cover with a paper which is moved up and down until the horse appears to be the right height. The under line of the body can be determined in the same way. This not only helps the child to draw free hand but stimulates observation of proportions.





If you were to name the most important trees in the world, those that provide food would undoubtedly head the list. But, economic factors enter into a consideration of the usefulness of trees. Among these are such factors as the supply of oil, wood, fibre, medicine, fertilizer, rubber, food for the silk-worm, turpentine, rosin, rayon, and cellophane. In school, the consumption of pencils averages about a billion a year. Wood is also used for paper, desks, doors, shoes, soap, and baseball bats for the playground. In America alone, an amount averaging twenty-three billion cubic feet of wood is cut during a year, while fires and insects destroy about two billion feet more. In fact, North America is said to consume about one-half of all the timber in the world.

The uses mankind has made of trees and his need of them, define the category of a tree's importance. There are all of fifteen hundred ways in which wood is made to serve man. Therefore planting a tree to replace one cut down is most essential. It should be remembered that we are destroying forests four and one-half times faster than we are replenishing them. Hence, the value of observing Arbor Day in the schools. It should enlist the interest of boys and girls in trees.

The state of Nebraska, once almost without trees, was responsible for the annual observance of a day on which small trees and seedlings are planted throughout the nation. J. Sterling Morton, Secretary of Agriculture under President Cleveland, first suggested that a special day be set aside for this purpose. In 1885, Arbor day, April 22, the birthday of Mr. Morton, became a legal holiday in Nebraska. Gradually the day came to be observed in other states, the date being set annually by a governor's proclamation. In the northern states the date falls in April or May; in the southern states it is celebrated earlier. Canada, Great Britain, Africa, and Japan also observe a day to conserve the trees.

First in importance, from the standpoint of age, are the palms. These were first grown in Egypt and Babylonia and for centuries have been a source of wealth in Arabia. The date palm supplies fruit, oil, wood, and fibre. The coconut palm, originating in the Malay Archipelago, is now grown in the East and West Indies, India, Brazil, and Florida. The people of the Pacific Islands use the coconut for food, eating the kernel, and making wine and sugar from the juice. When dried, the coconut produces copra, valuable in the manufacture of fertilizers; the fibre of

TREES

by

HANNAH MOORE

•

the stems is made into cordage.

Nuts of many kinds serve for food; the almond tree has served for the greatest number of years. The fig and the olive tree vie for honors in the field of economic importance. Both were grown in ancient countries, and continue to be cultivated in sub-tropical lands. The lemon and lime trees, now in world-wide use, were grown in India 2500 years ago. But the leading fruit of the world is the apple.

Although the apple originated in southern Europe and Asia, and was known to the Lake Dwellers during the Stone Age, it is most important in North America. In April the orchards don their spring apparel of pink blossoms, which mark the nation's forthcoming rich crop of juicy apples. Wenatchee, in north central Washington, is called the "apple capital of the world" because it is the center of the world's greatest apple-producing district. This was once parched, sagebrush land, but now the valley has been transformed into orchards. One-fifth of the United States' apple crop comes from the state of Washington. The boxes which hold the apples take as much lumber as the building of eight thousand five-room houses. This \$20,000,000 industry depends largely on irrigation. The canals are owned and controlled by the owners of the orchards.

When Ohio was still a wilderness filled with hostile Indians, Jonathon Chapman, called Johnny Appleseed by the pioneers, went through the state with a Bible and bags of appleseeds. Wherever he went, he set out nurseries of apple trees, going back to tend them, so the settlers who might come, would find small trees to start their orchards. The Indians thought him under the special care of the Great Spirit, because he traveled without a gun.

Since the days of Johnny Appleseed in the Northwest wilderness, Michigan has been recognized as a world fruit garden. Michigan's apple crop is exceeded by only three other states, while in the production of cherries it holds first place. The cherry has been cultivated in the world almost as long as the lemon tree. The orange, so popular in America, was not developed until the Middle Ages, and was unknown in

ancient Greece and Rome. The apricot, pomegranate, quince, mango, and clove trees are all important but are not distinguished for long years of service to mankind.

The coffee tree has been cultivated for only about five hundred years; the cocoa tree supplies cocoa, chocolate, and cocoa butter; but none of these products are used as extensively as tea. The latest tree to be cultivated has been listed as the tree which man could least afford to give up. This is the rubber tree, grown for less than forty years in Mexico, South America, Africa, and the East Indies. From its juice comes all the many rubber products of modern civilization. The bark of the cinchona tree, of Peru and Bolivia, was introduced into Europe early in the seventeenth century and is important as a source of quinine. Since ancient times the mulberry tree, a native of India and Mongolia, has been grown for its leaves, which are the food of the silkworm.

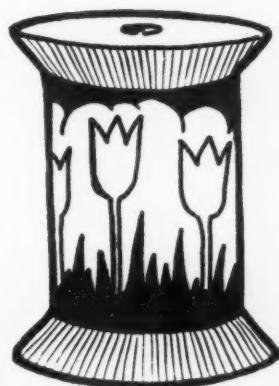
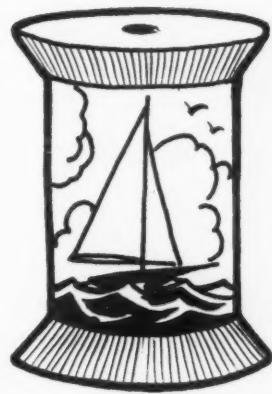
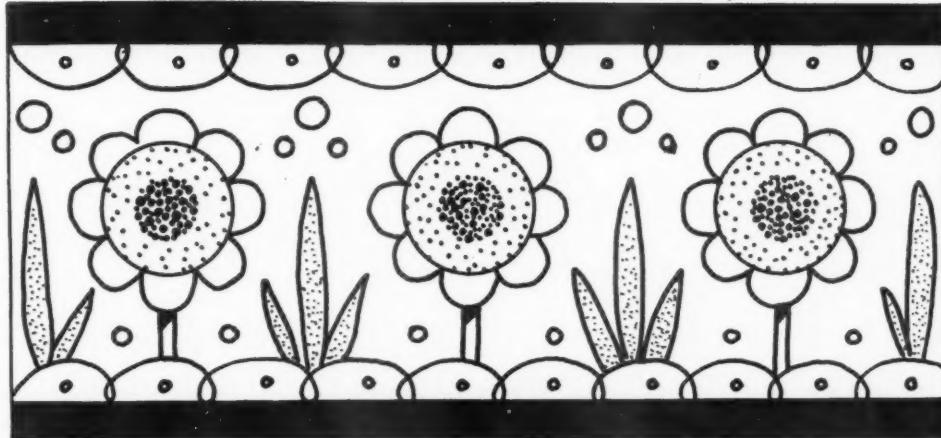
Very few of the great lumber producing trees of the world have been cultivated for their wood alone. They are not as important as the food trees because their wood can be duplicated by other species. Many of the trees which covered the United States when the Indians roamed the country have been cut to make way for farms and cities. In turn, towns have fallen off in population because of the diminishing forests. This was true of the towns in Michigan's lumbering areas.

What are a few of the needs met by the lumberman's axe? Railroads use one hundred and thirty million new wooden ties each year, upon which they lay the steel rails; five million trees are cut each year to hold telephone and telegraph wires; coal mine props are of wood; boxes and barrels need two hundred and fifty million cubic feet of wood each year; the newsprint, made from pulp wood, for one Sunday edition of a city newspaper, takes sixteen acres of Spruce wood; we use five hundred million fence posts every year. (See article on matches, October, '39, p. 20.)

There are two hundred thousand known insects which attack trees, and blights affect the trees' health: In the battle against the insects, Nature lends her birds. Protection of birds is protection of trees. In one section of Oregon, enough trees were destroyed by insects to build eight thousand homes costing ten thousand dollars each. Fire protection is another problem. The American Tree Association points out that "you can be of great service, as Theodore Roosevelt said, by 'acting the part of Good Citizens.'" Fight waste and plant a tree!

SPOOL CRAFT

Wooden spools of all sizes make tops, dolls, pencil holders, looms for spool knitting, curtain or lamp pulls, and trees and flowers for Spring sand tables or party favors. The spools may be cut to shape for tops and strung on heavy string for dolls. Paint them with enamel paint and shellac when dry. While painting, hold by sticking a pencil through the hole in the end. In primary grades decorate a plain piece of paper cut to size and paste around the body of the spool, decorating the top and bottom edges with crayons. To make flowers or trees, cut four pieces of cardboard and paint or cover with colored paper. Fold each through the middle lengthwise and paste together, then stick in the spool holders.





MOTHER GOOSE WALKIES LITTLE BO-PEEP

by
THELMA MORELAND
Farmington, Iowa

To make a durable toy Bo-Peep that will walk and run, draw the girl and the feet on cardboard, color and cut out. Connect the feet to the body with a paper fastener. Color suggestions: Color the hair yellow, the lips pink, the skirt pale blue, and the hat red. Leave the daisies on the hat white. Make the toy sheep's face a light gray and color the crook brown.



Announcement has been received of the twenty-second annual Humane Poster Contest, open to Grammar, Junior High and High Schools. This is one of the most popular poster contests in the United States, eagerly awaited by many schools. Cash prizes totaling \$410 are offered, with additional consolation prizes of certificates of merit and subscriptions to The National Humane Review. Prizes are to be awarded to four groups: Group I—Grades 1, 2, 3. Group II—Grades 4, 5, 6. Group III—Grades 7, 8, 9. Group IV—High School Students. All entries must be received by May 15, 1940. A poster contest announcement, similar to the above reproduction, in three colors, may be obtained for ten cents or three for twenty-five cents, and will prove an inspiration to pupils and to the entire community if posted in downtown windows during "Be Kind to Animal Week." Full particulars regarding the contest, the amount of the prizes, rules of the contest, and ideas and suggestions for mak-

ing the posters, may be obtained free from:

The American Humane Association,
135 Washington Avenue,
Albany, New York.

Here is an opportunity for teachers to put the art work of the school to a practical purpose. It gives the child a chance to develop his capacity for earning through a specific act calling for careful workmanship and responsibility. It is a venture offering mental enrichment, through experience in creative expression which is shared with the outside world. Even if the efforts of the children leave much to be desired, if everybody tries, the idea of kindness is constantly before the child. Competitive standards should be subordinated to the idea that the contest is held to help make those who are helpless, happier. There is no greater incentive to the growth of a fine character than being kind to someone who cannot help himself.

KINDNESS WEEK—APRIL 14-20

GOLDEN GATE INTERNATIONAL EXPOSITION, TREASURE ISLAND ON SAN FRANCISCO BAY

Throughout the broad expanse of Treasure Island, the Golden Gate International Exposition of 1940 will tell in pictorial fashion the story of man and the western seas. No one can say he has really seen the Exposition, which opens on May 25, until he has enjoyed at least a glimpse of every piece of statuary, mural, bas-relief, and artistic architectural decoration.

The mysticism of the East and the vision of the West are exemplified in the sculpture at the Exposition. Around the Court of Pacifica are symbolic figures of the Pacific area. Here are movement and life, young girls listening to music, happy Indians, modern women, an Alaskan boy spearing a fish, a North American group, South American figures, and Chinese musicians. Here is the Orient which symbolizes the quiet spirit of India. Some center around fantasy and stir the emotions while others are peaceful and tranquil. Around the fountain and peeking out from the Court of the Seven Seas are satyrs, nymphs, and Pans, full of impish mirth and laughter. Such heroic works as the eighty-foot statue of Pacifica and the hundred and forty-four foot mural of the Peacemakers establish a keynote of dignity and power.

The great relief mural, "The Peacemakers," at the northern end of the Fair, in the Court of Pacifica, is symbolic of the ocean of peace, the Pacific. It is in bold relief, combining sculpture and painting which gives a striking light and dark pattern. The central figure is a great Buddha with friezes of moving figures on either side representing the peoples of the Orient and the Occident.

From the foot of the gigantic figure of Pacifica flows a cascade of water which forms a rainbow with changing colored lights beneath the surface. The fountain itself is a bubbling well of fire which fades to a moonlight glow and boils up again in vivid orange and amber. The Court of the Seven Seas, has as its central theme the conquest of the waters. It extends from the Court of Pacifica to the Court of Honor over whose two main arches are figures representing Air and Water. Lofty pylons line the Court of the Seven Seas over which are prows of fabled galleons of the days of the Spanish Main.

The Tower of the Sun is the outstanding architectural piece, its lantermed spire rising over statues of Industry, Agriculture, Science, and the Arts. There are plaques of the Gentle Wind, Cold Wind, Trade Winds, and Storm.

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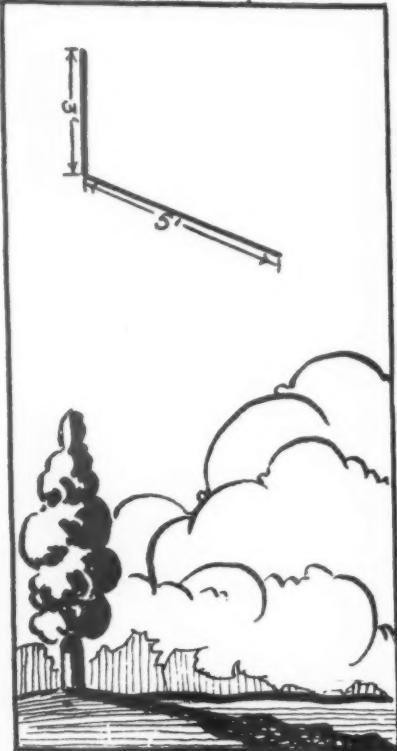
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AN ARITHMETIC PROBLEM

It is easy to determine the height of any tree in your school neighborhood by measuring its shadow on a sunny day.

Use a yardstick, stand it upright, and measure the length of the shadow it casts. Now, measure the shadow cast by the tree. If the tip of the tree is directly above the middle of the trunk, then add half the diameter of the trunk, to the length of the tree's shadow on the ground. Next, multiply the length of the tree's shadow (plus half the diameter of the trunk) by the length of the stick. Divide the product by the length of the stick's shadow, and the result will be the height of the tree.

Example: A stick 3 feet long, casts a shadow 4 feet long, and a tree with a 2 foot trunk casts a 30 foot shadow. Answer: multiply 31 (tree shadow plus half the trunk diameter) by 3 (length of stick), and divide by 4 (stick's shadow), the result would be 23 feet, 3 inches, the height of the tree.



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COUNTING BY TENS

by

F. PEARL MALLOY
Toronto, Ontario, Canada

To teach counting by "tens," I make cards about four inches by ten inches. I rule each card into ten squares and write a group of "tens" on the card. This is done with all the numbers up to nine. I then place one on a blackboard ledge and have the children play "Step."

One child is "it" and calls off the numbers from the card: the others march forward from a given mark. Anyone caught marching after the "it" child stops calling the numbers has to be "it." When the children become more adept at the game and know the numbers better, I vary it by giving the one who is "it" a certain number on which to stop. This adds interest and speed to the game and keeps everyone on the alert.

1	51	2	52	3	53
11	61	12	62	13	63
21	71	22	72	23	73
31	81	32	82	33	83
41	91	42	92	43	93

BOYS AND GIRLS WEEK

The 1940 observance of Boys and Girls Week will be from the 27th of April to the 4th of May, inclusive. The purpose is to focus attention upon the problems, activities, and training of the boys and girls of the community, and to enlist the cooperation of all individuals in the development of character in the coming generation. Boys and Girls Week originated as Boys Week through the New York Rotary Club in 1920 and since then the week has been observed quite generally throughout the United States and Canada. When local communities began to include girls as well as boys in the program, the name of the week was changed in response to popular demand. It is not the creation of any one organization nor the propagandist for any agency. It seeks, impartially, the betterment of youth.

The National Boys and Girls Week Committee for the United States, 35 East Wacker Drive, Chicago, Illinois, will send free upon request, the *Advance Herald*, outlining a program for each day, with appropriate posters, parades and pageants. A *Manual of Suggestions* may also be secured free of charge upon request. It contains detailed suggestions for carrying out the program outlined.

• ARBOR DAY • TREE NAME PLATES

Arbor day is of general group interest and motivates such activities as the lettering of signs for trees. Have a tinner cut plates from galvanized steel, 3" x 5", and coat them with waterproof black paint. Make paper patterns, lettering the common and botanical names, and the native country of the trees found in the community. Scratch the letters through the black paint and coat with waterproof varnish. Screw signs to a block so they can be nailed to the tree without harming the bark. Make fire protection posters and place on fences near woodland plots. (See p. 22, October, '39, issue for poster designs.)



ANSWERS TO APRIL TRAVEL QUIZ

1. 46.
2. Great Salt Lake.
3. Colorado; average elevation 6,800 feet above sea level.
4. British Columbia.
5. Mexican.
6. Mt. Hamilton, California.
7. 1847, at San Francisco.
8. Yosemite.
9. Boulder Dam; 727 feet.
10. Arizona—New Mexico.
11. Idaho.
12. Colorado Springs.
13. 83.
14. Snake River Canyon, Idaho.
15. 1869.
16. Laurel-wood from California.
17. Nevada (silver)—Arizona (iron, silver and gold) — California (gold).
18. 1836.
19. Three cessions of territory: Louisiana Purchase, 1803; Mexican settlement, 1848; ceded by Texas, 1850.
20. Arizona.
21. 1811.
22. 24 days.
23. Mojave Desert (California).
24. Granite Creek Desert (Nevada).

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by
D. C. Blide

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Written and published by D. C. Blide, Director, Industrial Arts Department, State Teachers College, Minot, North Dakota

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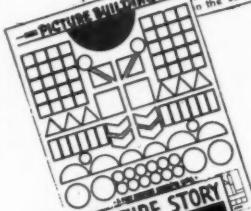
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